Reversing the politics of youth velonomy

Realist action research on the pluriversal
rationalities and representations of
collaborative cycling governance

Jonne Silonsaari

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To Kauno and Tuisku, who learned the art of pedalling during this project.

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Table of Contents

OVERVIEW OF PUBLICATIONS

Chapter 3
Silonsaari, J. (2024). Prefigurative politics in action research for just cycling futures. Urban, Planning and Transport Research, 12(1), 2318436.

Chapter 4
Silonsaari, J., Simula, M., Te Brömmelstroet, M., & Kokko, S. (2022). Unravelling the rationalities of childhood cycling promotion. *Transportation research interdisciplinary perspectives*, *14*, 100598.

Chapter 5
Silonsaari, J., Simula, M., & te Brömmelstroet, M. (2024). From intensive car-parenting to enabling childhood velonomy? Explaining parents' representations of children's leisure mobilities. Mobilities, 19(1), 116-133.

Chapter 6
This chapter has been submitted as a single authored paper in the journal *Cities*.

Chapter 1

Introduction

When a child learns to walk, they usually take their first steps towards the awaiting arms, towards the lap. When a child learns to ride a bike, they break away from the grip and ride towards the world, away, with others. The bicycle is a means of moving into the flow of traffic and time.

-J.P Pulkkinen (2022)[1]

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1   Own translation.

Child autonomy is the starting point of the author and journalist JP Pulkkinen in his cultural investigation on bikes and their uses in stories, films, literature and urban life. At least on the level of representations, cycling seems to have a somewhat important relationship with children's autonomy and agency. However, Pulkkinen observes simultaneously the problems cycling has had in terms of lacking status as 'real' transport. He cites the 1962 book *The Smooth Running City* where architect Olavi Laisaari is on a mission to import car-centred transport planning from US to Europe: 'In America, you only see bicycles as children's playthings, rather than any degree of a transport issue'. Indeed, constructing cycling as 'recreation', 'health promotion' or 'environmentalism' rather than 'transport' has been an efficient way to marginalise it in the urban order (e.g. Aldred, 2012)[2].

But in the 2020s numerous cities and societies are trying the opposite: making serious efforts, investments and changes to (re)establish urban cycling as a serious *transport* issue. Discourses of sustainability, liveability and social equity portray cycling as a source of hope in an age of augmenting environmental and social problems (Auge, 2008; Illich, 1975; Verkade & te Brömmelstroet, 2022). Here, 'sustainability' is considered a synergetic bundle of problems, not a transient disturbance that could be dealt away by 'tweaking' policymaking and governance – it demands changes in deep-seated, path-dependent socialisation processes of contemporary societies (Klein, 2015). Climate breakdown, immigration, public health and urban inequality work together in complex ways and these constellations have prodded researchers to analyse urban mobility and, any transition thereof, as an issue of social justice (Gössling, 2016; Karner et al., 2023; Verlinghieri & Schwanen, 2020). As Mimi Sheller (2018) argues, we should not expect wide ranging mobility transitions if we cannot simultaneously tackle the intersectional, socio-spatially produced, multi-scalar and historically contingent injustices that provide the conditions for the multiple overlapping crises.

Against these challenges cycling is not a universal 'solution' that could be simply universally implemented to 'fix' human caused environmental and social problems (Spinney, 2018). Rather than a mere mode shift or mobility reform, cycling can, and arguably should, be transformative of the social and political relations that regulate issues of sustainability, urban citizenship and justice in the first place (Cox, 2023). This study engages with these issues from the perspective of children and young people. It seeks to explain why young generations' autonomous uses of the bicycle are suppressed in western urban contexts and how these developments could be reversed. Working with an emancipatory and change oriented interest (Habermas, 1974), it complements existing knowledge on childhood, youth and mobility with and action research approach.

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2   It is perhaps symptomatic that in Finland Pulkkinen's work was awarded 'Sports book of the year'.

Pluriversal pedallings

Conventional transport policy and research have been widely criticised in terms of their ability to rephrase and reanalyse the issue of mobility and create *transformative* approaches. Positivist disciplinary understandings, tools and methodologies of urban planning and mainstream economics have led to extensive focus on the optimisation of flow, travel time savings and efficiency, constructing mobility as a 'derived demand', cost and disutility (Banister, 2008; Davoudi, 2012; te Brömmelstroet et al., 2022). The modelling of the economic 'costs' and 'benefits' has been coupled with anticipatory transport politics, producing self-fulfilling prophecies regarding the 'inevitable' expansion of certain modes of mobility and certain mobility practices that people's everyday lives build upon. The optimisation of speed, connectivity and economic benefits are connected to discourses of freedom, modernity and rationality, and framed as constituents of the good everyday life (Doughy & Murray, 2016; Freudendal-Pedersen et al., 2016a). In other words, there is a powerful hierarchy in 'knowing' and 'non-knowing' what mobility is for, what it should do and how it can be changed (Nikolaeva, 2024; Schwanen, 2021a; Sheller, 2018). In the conventional regard, mobility issues demand solutions from 'experts' that hold the special type of knowledge that is deemed valid in public debate and decision-making.

The most prominent manifestation of these developments is, without contest, the *system* of automobility (Urry, 2004). This concept reaches far and wide beyond the mere practices of driving a car to explain how it is systematically entrenched into the social, political, spatial, economic and material fabric of contemporary societies (Curtis et al., 2010; Manderscheid & Cass, 2023; Norton, 2011). On the level of everyday life, automobility is sustained through narratives on how certain mobilities make more sense than other in achieving 'good' life (Freudendal-Pedersen, 2009). Even our bodily experiences are imbued with the automobility and automobilism: we are *feeling the car* (Sheller, 2004) and its hegemony caters not only to aforementioned discourses of efficiency, modernity and freedom, but also care, cultivation and intimacy (Kent, 2015; Waitt & Harada, 2016; Wheeler & Green, 2019). Politically, driving becomes sustained as an essential feature of the basic reproduction of urban life, and 'alternatives' as cycling are framed as conditional and recreational (Aldred, 2012; Egan & Caulfield, 2024). This path-dependency is why studies time and time again need to re-animate the impossibilities of automobility (Böhm et al., 2006), and explain why 'motonormativity' is creating inequitable circumstances for urban life and biting the resilience of cities and societies in times of extreme problems in environmental and social sustainability.

In other words, the system of automobility is a system of power, closing down other mobility narratives and imaginations. And as such it is also the necessary starting point of critical cycling research. It is well established that any cycling transition needs to take issues with the regime of automobility and its path-dependencies, but *also* simultaneously think beyond it to prefigure different realities (Cox, 2019, 191-192). As a starting point of transformation it simply does not suffice to merely state that we need to shift cars to bikes, because automobility and automobilism are the hegemonical points of reference for *all* mobility, and as such shape also how *cycling* is imagined, experienced and governed: 'the hegemonic position reached by automobility as a dominant system has led to closure of political non-car mobility imaginaries' (Cox, 2023, 255; also Koglin 2020; Koglin & Rye 2014).

Consequently, where cycling is subordinated to hegemonic mobility rationalities it (re)produces injustices as any other 'tool' would. In many places cycling governance caters mostly for the able-bodied, white, middle-class men, 'othering' dissimilar cycling bodies and practices (Aldred et al., 2016; Golub et al., 2016; Osborne & Grant-Smith, 2017; Pedroso & Aldred, 2023; Lam, 2018). Bicycle lanes have become an emblem of gentrification and white privilege, manifest in accusations of racist and elitist planning (Hoffman, 2016; Stehlin, 2019). Pedalling performances as 'cycling while Black' (Osei & Aldred, 2023), (velo)mobilities of care (Ravensbergen et al., 2021) and feminine (Abord de Chatillon, 2020) or childish (Spinney, 2024) engagements and movements with the bicycle are marginalised as they deviate from the norm. As explained by Stehlin, cycling is an apt example of why mobility is 'a modality through which differences such as race, class, gender, and the division of labor are lived, and a medium through which the "social tectonics" of gentrifying space become visible' (2019, xii). Indeed, it is not any type of cycling, but ones deemed economically productive (e.g. commute to work of 'skilled' workers) that gain privilege under the neoliberal global capitalism, augmenting contingent injustices (Cox, 2023; Spinney, 2020; Sheller, 2018).

To summarise, mainstream cycling policy is failing to achieve its emancipatory, egalitarian, and environmental potential not only because it is marginalised by automobility but also because it is not providing a *transformative* alternative, that is, a change in how urban mobility could be reimagined all together. Spinney (2018) calls cycling a mobility 'fix': a narrowly constructed understanding of movement as a 'solution' to matters of economic concern such as public health and labour force productivity. Cycling in constructed as a purely functional and instrumental 'tool' to curb the above discussed intermingling crises, especially that of environmental sustainability (Cupples & Ridley, 2008; Koglin & Rye, 2014). The physical act of pedalling is understood as a 'rational' practice, 'chosen' by unconstrained and value-free rational agents, which allows establishing some forms of movement as 'rationally' more impor-

tant than others (Aldred, 2015; Spinney, 2024). In other words, mobility is depoli-tisized (Reigner & Brenac, 2019), but transformative change would demand exactly the opposite – taking issue with the politics of mobility in the broadest sense (Cox, 2023)[3]. This means critically investigating whose movements are being facilitated, at what cost for others, with what kinds of contingent obligations and how mobilities of some demand immobilities of others (Cresswell, 2006; Manderscheid, 2009; Sheller, 2008; 2018). These issues span from governance, policy and planning (Koglin & Cox, 2020) to everyday 'life politics' (Freudendal-Pedersen, 2009), where *certain* types of movements for *certain* people have been allocated a *certain* space (figuratively and physically).

The point is that cycling is not universal. And once it is acknowledged that uni-versalising construction of 'cycling' marginalises other ways of pedalling, it becomes apparent that this politics of mobility can also be renegotiated and reversed. Creating conditions for 'other' forms is possible, but only if we stop thinking about cycling as a singular entity and start sorting out and nurturing imaginations and enactments of its *pluriversal* forms (Cox, 2023). Change is contextual, knowledge is situated and the processes leading to cyclings should not be locked in on predefined trajectories. Cyclings, as other mobilities, are assembled in peoples' spatial, cultural, political, eco-nomic, social and personal contexts, and emerge relationally in open systems (Sheller & Urry, 2006; Urry, 2007), meaning that people 'become cyclists' through fluctuating socio-material relations and life circumstances (Adam et al., 2022). So, rather than 'fixing' mobility (Spinney, 2016), any reversal in the politics of mobility should be based on contextual understanding on what type of pedalling, where and how can be felt and constructed as 'good', 'right' and 'just' for people in their environments (Waitt & Buchanan, 2023; Waitt et al., 2021). Thus, transformative cycling advocacy is necessarily situated, and universality is a delusion, as put Castañeda (2021):

> *Claims to universality [of cycling] rest on the ambition of disguising one's position and performing a "god-trick": at once being nowhere and encompassing everywhere (Haraway, 1988).*

Here expert engineering of 'solutions' for urban cycling becomes a naïve idea and established ways of 'knowing' what cycling is and what it is for become questioned. Cycling is necessarily pluriversal with infinite connections to other practices, meanings and performances. To emphasise these issues, critical cycling scholars have coined the term velomobility that implies not only the change in transport modes but also in the social, political, economic and spatial preconditions that mobilities rest upon (Furness

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3   The political elaborations of Cox and for example Valentini (2024) are different from my work as they connect vélo-mobilities to broader systemic and political imaginaries, namely de- and post-growth.

2007; Koglin 2013; McIlvenny 2015; Cox 2019; Valentini, 2024). This study is an attempt to study and facilitate velomobilities of children and young people[4].

Children, young people and the politics of mobility

Children's urban geographies and mobilities have become a contested issue in westernised cities and societies. The general trend shows a consistent decline in children and young people's autonomous mobility and use of public spaces in recent decades (Hillman, 1990, Kyttä et al., 2015, Shaw et al., 2015). This is most often problematised in health science and paediatrics respective to health, obesity, and lack of physical activity (e.g. Marzi & Reimers, 2018) but also mental, emotional and social wellbeing (Gray et al., 2023; Pacilli et al., 2015). Sociological and geographical work has interpreted these issues from different viewpoints, three of which are especially relevant for this study.

First, a lot of research has focused on the societal norms concerning childhood and youth that have led to their activities and mobilities being controlled in an unpreceded manner (Hays, 1996; Prout, 2000). These practices are encouraged by powerful representations of 'good' childhood, life and parenting amplified by policymaking, education and public discourse (Furedi, 2002; Lee et al., 2014). From the socio-spatial perspective the result is what Holloway & Pimlott-Wilson (2014) have called the 'institutionalisation' of childhood where entire generations spend their youths sequestered in homes, cars, virtual environments or specialised spaces for adult-controlled education and play (see Karsten, 2003; Malone, 2007; Pain, 2006; Rasmussen, 2004; Zeiher, 2003). For mobilities the key implication is that normative assumptions about childhood, youth and family life are often structured around the car and the narrative of 'when you have children, you need a car' (Freudendal-Pedersen, 2009; Hjortol & Fyhri, 2009; Waitt & Harada, 2016). Studies discuss the practices of chauffeuring children as tactics to divert urban risks as car-traffic and stranger-danger (Barker, 2011; McLaren & Parusel, 2012; 2015; Murray, 2009; Gilow, 2020), but also to provide unrestricted access to 'cultivating' and 'enriching' institutional settings as sports clubs and other organised activities (Lareau & Weininger, 2008; Wheeler & Green, 2019).

Second, arguably a more critical and less studied field is concerned with how different youths across ethnicity, gender and class positions have differential capabilities for urban mobility[5]. Many marginalised youths, in Bauman's terms, are 'living in the

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4   Even though there are often good reasons to separate between 'children' and 'young people' I use these terms interchangeably as referents to people who are legally minors in study contexts, i.e., under 18-year-olds.

5   In this perspective important research gaps persist, which reflects the more general neglect of child and youth research in urban studies (Skelton & Gough, 2013).

world of the locally tied' (1998, cited in Ekman-Ladru et al., 2023)[6]. They possess little 'mobility power', that is, they have less ease of movement and less access to different kinds of mobilities compared to their more privileged peers. This has very tangible social consequences: for example, lower class racialised young people's physical (im)mobility out of their home territories impacts their potential social mobility (Reynolds, 2013; Saraví, 2014). Indeed, young people negotiate the city based on the mobilities that are available to them in material and spatial terms, but also based on their gender, ethnic and class identities (Skelton, 2013). These issues are also often highly influenced by territorial stigma and contingent strategies that youths create to counter social pressures (Cairns, 2018; Farrugia, 2020). These normative experiences and constructions on certain types of mobility, in certain places, by certain bodies are crucial for understanding what 'capacities of movement shape our bodily experiences and identities within normative social orders and hegemonic mobility regimes' (Sheller, 2018, 47).

Thirdly, there is a highly relevant set of studies describing the processes of 'mobilising' children and young people, that is, how they are becoming or have become autonomous or agentic *in* and *through* mobility (Nansen et al., 2015; Joelsson, 2019; Kullman, 2010; 2015; Mikkelsen & Christensen, 2009; Wales et al., 2021; also, Ekman-Ladru et al., 2023). Overlooking rather extensive behaviour change research on children's health promotion and active transport schemes (e.g. Larouche et al., 2018), I refer to studies that explain 'becoming mobile' in relational terms (rather than as a result of 'interventions') and mobility as more than physical movement. Especially research that is there to observe processes where children and young people's mobilities *actually* change is crucial for developing knowledge on transitions and its relational conditions and repercussions. Here, 'transitions' should not be considered sequential events where subjects switch from one state of being (dependent/inactive/immobile) into another one (autonomous/active/mobile). Rather, they are spaces or assemblages: webs of interactions between people (e.g. parents and peers), materials (bicycles and equipment) and spaces that allow fluid movement in-between states of being (Kullman, 2010; Mikkelsen & Christensen, 2009). In these processes mobility intertwines with notions of 'growing up' and the necessary 'becomingness' that the social construction of childhood and youth entails (Horton & Kraftl, 2006). Here any ambitions to mobilise children should be analysed critically to understand the latent valuations of such processes and what types of mobile citizens the policies and activities aim to nurture into being (Ekman-Ladru et al., 2023).

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6   Evidently the opposite is also true that especially more extreme marginalisation also *forces* some young people to move (Langevang & Gough, 2009).

Taken together these insights emphasise how youth mobilities are relationally produced in the strongest sense of the word: mobility is constitutive of childhood and youth and vice versa and the politics of mobility is necessarily a part of wider politics of youth (Barker et al., 2009). Here, spatialities and movements depend on how 'childhood' and 'youth' are socially constructed in society (James et al., 1998) and how mobilities of children and adults are staged by different institutions (Murray & Cortés-Morales, 2019).

But, crucially, despite these normative spatial, material, social and discursive structures there is also *agency* and possibilities for children and adults to act differently. Even though children and young people might be constructed as 'becomings' rather than 'beings' (Uprichard, 2008) and as not-yet-citizens rather than citizens (Qvortrup, 2005), their urban citizenship is not only a status to be achieved but *performed* through movements as it relates mobile subjects to each other and hegemonic governance regimes (Aldred, 2010; Castañeda, 2020; Spinney et al., 2015). This way mobility is produced by 'an assemblage of people and things, of technologies and regulations, of stories and sites' and in these assemblages the 'citizen' becomes defined by the right to mobility' (Creswell, 2009, 271; also Kullman, 2010; 2015). Hence, changing youth mobilities means changing understandings of their status as differentially situated urban citizens.

In sum, youth velomobility suffers from multiple layers of marginalisation. Firstly, in most contexts cycling is supressed by automobility and hegemonic mobility rationalities that construct it as a non-viable 'transport issue' or a mere mobility 'fix' (Spinney, 2018). Secondly, many social groups, including children and young people, are marginalised in cycling imaginaries, processes and advocacy, largely due to how relevant institutions stage their mobilities (Murray & Cortés-Morales, 2019). And third, some children (racialised, lower class) are furthermore marginalised inside those margins: studies have shown that ethnicity, class and gender all make a difference on which children get to enjoy the benefits of pedalling (McDonald et al., 2021). With this outset, the question is how can we find ways for mobilising *all differentially situated* children on bikes, and reverse the locally contingent politics of mobility. Researching and facilitating this reversal is the aim of this study.

Aim of the study

Despite youth geographies and mobilities arguably still need further studying, my work does not focus on children's experiences per se. Rather the aim is to explain how their autonomous movement could be facilitated by challenging the universalising

one-size-fits-all cycling governance. The global ambition of this study is to *prefigure (enact here and now) and explain forms and governance processes of youth cycling, that are currently marginalised in power-laden, locally contingent and discursively shaped constellations of mobility.* The study works gradually through different layers of marginalisation of youth cycling, i.e., how automobility marginalises cycling; how hegemonic notions of cycling are marginalising 'childish' or 'youthful' pedallings; how certain youths are marginalised inside those margins; and how large parts of research and policy are limited in their capability to counter these issues.

I used realist action research methodology to engage with diverse actors to co-create *experimental cycling initiatives* that sought to counter social processes that inhibit children and young people's autonomous pedalling and, simultaneously, trigger those kinds of processes that enable it. I explain in Chapter 2 how these processes are conceptualised as *social mechanisms* following the metatheoretical branch of critical realism (Bhaskar 2008; 2015). In short, they are powers, liabilities, structures and tendencies that determine how social initiatives work themselves out in their respective contexts (Pawson & Tilley, 1997). Moreover, I argue that these mechanisms are *actualised* in cycling initiatives as *rationalities* and *representations*, where the former means the socio-material forms of organising on and for cycling and the latter the discursive construal of contingent meanings. With this approach, the study 1) adds to the methodological discussions around transformative mobility research and 2) addresses key knowledge gaps on 'mobilising' children.

First, as argued in the above cycling research and policy need to account for pluriversal definitions on what mobility is for and how it is performed and turn from solutionist and technocratic research and policy to creative and value-driven methodologies that allow for marginalised and oppressed bike rationalities and local knowledge to emerge (Cox, 2023). Here, mobilities research has developed a range of flexible and adaptive methods to study the fluid and ephemeral phenomena that it is interested in, labelled as 'mobile methods' (Büscher et al., 2020; 2011; Fincham et al., 2009; Urry, 2007, 30-42). Still, among them action research is seldom used to change mobility governance and when it is, it is not coupled with practical experimentation co-created among diverse actors who have something at stake in those processes (c.f. Freudendal-Pedersen & Kesselring, 2016; Freudendal-Pedersen et al., 2016). Moreover, I argue that the conceptualisation of action research as an explicitly *realist* methodology can clarify various science theoretical and methodological ambiguities that participatory and action-oriented methods have entailed, advancing the discussion on mobile methods (see Chapter 2). With this, the study addresses the criticism that little studies manage to move from 'reformist' to 'transformative' approaches to renegotiate the underlying structures and conventions of mobility governance and planning (e.g. Karner et al.,

2023). Thus, following Sheller, (2014) **Subtask 1** is to *explain how research can become part of the empirical field it seeks to study by coupling critical analysis of mobilities with disruptive practical action.*

Second, and contingently, I explain *why*, not *if*, the initiatives managed or failed to have certain impacts. In other words, rather than describing *outcomes* of cycling initiatives the focus is in their inherent functioning (social mechanisms). This is to criticize health, transport and behaviour change research seeking to explain 'what works' for promoting children and young people's active mobility. There is little open criticism or reflexive analysis on why mobility initiatives as bike-to-school schemes, cycling skills trainings, incremental infrastructure changes and other projects have produced a mixed bag of findings (Larouche et al., 2018; Jones et al., 2019; Villa-González et al., 2018). The impact of such interventions is often modest but the research designs and latent philosophical positions provide little means to discuss why this is. Still, these studies keep getting repeated, with minimal new insights on what should be done in policymaking or where to look next in research. Decontextualised research designs not acknowledging the relational assemblage of mobilities consider cycling and other 'active transport' and 'independent mobility' as functional and instrumental fixes to problems of obesity, lack of physical activity, traffic emissions and other issues (Spinney, 2016). But as put by Waitt and Buchanan, we need to complement health policy thinking around cycling as active transport by considering it as a process of territorialisation where 'research starting point is not the assumption that riding a bike is inherently good for your health and should be conveyed through education policies' (2023, 8). My **Subtask 2** is to *explain why certain types of cycling and cycling initiatives work for certain youths in certain contexts*[7].

Research questions

Given these tasks and orientation for emancipation and change, the overarching research question is:

What social mechanisms do the experimental cycling initiatives trigger to actualise rationalities and representations of youth cycling that counteract hegemonic practices and discourses?

This main research question is addressed with two case studies and their respective research questions. They answer the main research question with two different

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7   This question reflects the realist research question, 'what works for whom, under what circumstances and why' as discussed in Chapter 2.

conceptualisations of social mechanisms, studied and instigated with a realist action research approach: 1) prefiguration of youth velonomy and 2) prefiguration of mobility commoning.

As discussed, there is a wealth of knowledge on how children's mobilities are relationally shaped but how, when, where and for whom they *change*, is another issue. Here, for example the work of Kullman (2010, 2015) is a rare exception, as he has studied how children are 'becoming' mobile through mobility experiments. However, this study supplements earlier insights by laying explicit claim on governance and by not only observing but also instigating change. In other words, if we acknowledge that children acquire mobile autonomy and agency, in Kullman's (2010; 2015) terms, through relational assemblages and transitional spaces, how can they be facilitated? Here, the starting point is that these processes are *contextualised* in local constellations of mobility: geographically specific formations of movements, mobility narratives and practices that make sense together (Creswell, 2010). Here different 'issues', 'problems' and 'benefits' of (im)mobility carry different meaning.

First case study, working from the notion that youth mobilities have become highly car-dependent because of the 'institutionalisation' of childhood, explains why velonomy as a cycling promotion rationality and mobility representation can counteract these developments. Here the research question is:

1. **Why can *velonomy* produce governance rationalities and representations that challenge car-dependence in the context of socio-spatially institutionalised childhoods?**

Second case study, working from the notion that opportunities for pedalling are unequally distributed among children based on their socio-economic and ethnic background, explains why mobility commoning can address these injustices by facilitating more inclusive cycling governance. Here the research question is:

2. **Why can *mobility commoning* produce governance rationalities and representations that provide equal opportunities for cycling in the context of socio-spatially marginalised youths?**

Conceptual framework

I next provide an outline of the conceptual apparatus that these questions are studied with. It provides my study what realist researchers call 'middle-range theory', meaning

those abstractions that direct and redirect my findings in dialogue with empirical observations (see Chapter 2). The key concepts are cycling governance; experimental initiatives; rationalities; representations; and the contextually contingent social mechanisms that they emerge from – namely prefigurative politics, velonomy and mobility commoning. Their relations are depicted in Figure 1.
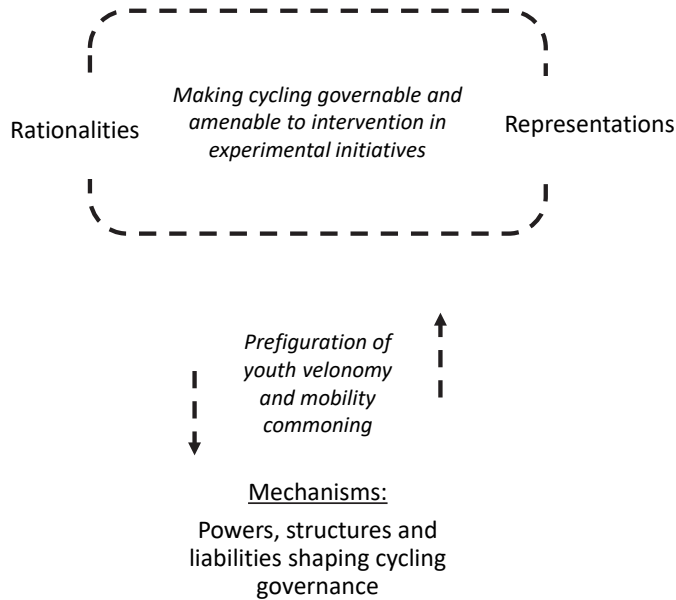
Figure 1 Conceptual framework of the study (author).

Cycling governance and experimental cycling initiatives

Given the relational approach to mobilities, I consider cycling governance a relational process emerging from the local and contextual constellations of mobility (Creswell, 2010). To allow for an open approach, I deploy a broad definition of cycling governance following Valentini (2024, 25): 'the practices through which different actors come together to construct, act *on* and *for* issues of cycling'. The main concern is how cycling and cyclists are *constructed as governable objects and made amendable to intervention*, as there are always many ways to define 'problems' and 'goals' (Valentini et al., 2023). The participants of the study included cycling advocates and activists, civil servants, parents, and actors organising children's leisure activities, all having different stakes in youth mobilities. This plurality of interests and viewpoints implies how governance is not reduced to 'government' but understood as a collaborative process where 'governance is a complex, decentred, fluid and potentially chaotic process that involves different public and private actors operating in formal and informal settings that are subject to ongoing processes of institutionalization and deinstitutionaliza-

tion' (Sørensen & Torfing, 2018, 351). Crucially, these networks and their workings are always imbued with power, to the extent that governance *of* mobility necessarily also means governance *through* mobility as connections and flows of movement are constitutive of, rather than a result of societies (Bærenholdt, 2013).

In practical terms, cycling governance encompasses a range of practices and technologies, as those of urban planning, but this study deals exclusively with experimental cycling initiatives. They are mobility experiments understood as socio-cultural and material activities that seek to alter how mobilities are locally assembled (Kullman, 2015; Laakso, 2019). Yet, the study is not only interested how mobilities are performed but more how they are governed. In other words, experimentation does not limit to the contents or outcomes of the initiatives, but also involves the ways they are planned, implemented, evaluated and developed. Thus, the notion of cycling governance deployed here should be understood as a form of experimental transition governance (Loorbach et al., 2021).

Rationalities and representations

However, these broad definitions of governance and experimentation do little to explain the dynamics of how cycling is actually *made governable*. I conceptualise it as the interplay of mobility rationalities and representations. My argument is that it is important to analyse both, the material and social forms of organising the initiatives *and* the language they deploy to explain why given actions with given impacts come to be. The point is that governance is not only about *acting and organizing* in particular ways, but also *representing* ways of acting and organizing. Indeed, it is difficult to see how either one could create a meaningful initiative by its own, let alone prefigure a different reality. As Creswell (2006) put it, mobilities are about movement, meaning and practice. With the first one he means patterns of movement – the flows of people and vehicles moving through space as measured and mapped in transport studies. I seek to explain how to change these patterns for children and young people but depart from positivist analysis and modelling of movement where 'physical movement of the human body has been extracted from real bodies' (Creswell, 2010, 19). The emphasis is on practices and meanings of mobility. But as the focus is more on the governance rather than performance of mobilities, the point is, to repeat, how practices and meanings are *made amenable to interventions* by constructing rationalities and construing representations in governance processes[8].

To start with rationalities, I understand them as institutional, social and material forms of organisation around cycling advocacy and promotion, 'shaped by discourses, constituted through power and made visible in local practices' (Richardson 2001,

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8   The difference between constructing and construing are discussed in Chapter 2.

303). Evidently, cycling practices demand certain embodied dispositions (e.g. skills and affective appropriation); materialities (e.g. bikes) and spaces (Cox, 2019). So firstly, any cycling initiative necessarily needs some sort of an idea (or theory) on what makes certain dispositions and socio-material relations emerge and a set of actions that makes sense respective to those ideas. Secondly, cycling practices have different consequences for the individuals, communities, cities and the environment at large (e.g. in reducing youth obesity and traffic emissions). So, the set of actions that aims to nurture cycling dispositions also has to make sense respective to these evaluations on impacts of pedalling. Hence rationalities simultaneously answer the questions of *how* and *why* cycling should be promoted[9]. In the case of youth cycling the *why* most often revolves around the lack of healthy physical activity and its economic repercussions (e.g. Marzi & Reimers, 2018), and the *how* around the journey to school as it is often segregated as the single most important mobility practice (as a counterpart to adults' commute) (Mitra, 2013).

As I shall explain, rationalities do not work through coercion but suggestively by shaping the fields of action where mobilities are imagined, enacted and experienced. In other words, they entail certain governmentality (Foucault, 1991), foregrounding some ways of 'knowing' cycling and out ruling others. But especially in participatory settings such as this study, they are also enmeshed with affective, embodied and experiential qualities of pedalling. As Jensen (2011) has explained, power is not limited to governmentality because it also works through kinetic, sensuous and ambient aspects experienced by mobile subjects: '[i]n parallel, power is distributed through emotional experiences and cultural differences that are productive of particular mobile emotions' (Doughty & Murray 2016, 307).

Representations, in turn, are discursive facets of rationalities that describe 'cycling' and 'cyclists'. Action research and contingent experimentation as 'practices that change other practices' are largely negotiated and given meaning through language, because they must change not only the practices of how people operate but also their *understandings* of their practices (Kemmis, 2009). It is important to connect actual forms of organising cycling initiatives (rationalities) to representations of cycling and cyclists, because they entail causal and normative claims about cycling subjects and cycling performances, i.e. why certain actions come to make sense to actors. This is implicitly readable in studies problematising hegemonic representations, especially the construal of cycling subjects as able-bodied, white, middle-class men (Aldred, 2015; Osborne & Grant-Smith, 2017). If these construals were not to have causal properties, they would be redundant and studying them would be largely senseless.

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9   This is effectively what is discussed in Chapter 2 as 'program theory'.

In analytical terms, the concept of representations is derived from Fairclough's (2003; 2013) critical discourse analysis, that provides a framework for social analysis of texts and their interconnectedness with social practices and structures (see Chapter 2). So even though representations are 'mere' constructions they are networked with non-discursive practices and structures and these dialectical relations alter how the two are formed.

Finally, the constellations of rationalities and representations are imbued with normative power and as such they are necessarily political and encompass issues of justice. This is to say that rationalities contain ideas about the 'right' sort of deliberation, procedures and knowledges needed to govern mobility, respective to what Sheller (2018) discusses as recognitional, procedural and epistemic justice. These aspects are especially elaborated in Chapter 6 that discusses mobility commoning as a specific type of cycling governance rationality[10].

Social mechanisms and contexts

As I will further explain in Chapter 2, the rationalities and representations actualised in cycling governance emerge from social mechanisms. They are, concisely put, the latent deep-level social processes that give rise to certain ways of acting and giving meaning. In this study these mechanisms were conceptualised as prefiguration of youth velonomy and mobility commoning. Their functioning is contextual meaning that their 'working' and 'sensemaking' depends on the social, political, material and spatial environments. In this study the contexts are the specific phenomena and local constellations of mobility of the two case studies.

Prefigurative politics

The study approaches change and transformation by facilitating social and material infrastructures for children and young people's autonomous cycling in contexts and situations where they are not (yet) reality. As discussed above, there is a wealth of knowledge on young people's mobility explaining why certain structures and discourses don't allow youth velomobility to emerge. Still action research happens in these real-life settings, and as such it has to find ways to build conditions for different realities. Building new, and arguably better, realities 'in the shell of the old' have been discussed in academic and social movements as prefigurative politics (Raekstad & Gradin, 2020). It refers to the strategies and tactics of (political) practice to enact *here and now* the social and political relations, culture and human experience that are not yet prevalent in the society. The basic premise of *prefigurative politics* is that despite

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10   The concepts and terminologies are not fully cohesive in the individual publications. This is for example why Chapter 6 does not discuss 'rationalities' but simply mobility commoning (as a rationality).

current oppressive or unjust conditions, reality is malleable and can be renegotiated even by marginalised subjects (Jeffrey & Dyson, 2021)[11].

Velonomy

As discussed in the introduction, the concept of velomobility as an antithesis of automobility means not only contesting its environmental and social problematics, but also the radical dependency and reliance of mobile subjects on one universal system, regime or dispositif. In other words, velomobilities invoke pluriversal possibilities of movement that are grounded in people's self-reliance (Cox, 2023). The condition for pluriversal rather than universal cyclings means then dismantling the existing and prospective path dependencies stuck with hegemonic principles (speed, efficiency) and establishing mobility based on autonomy (Cass & Manderscheid, 2018). Here, the autonomy that using the bike provides for people struggling to break loose from established stagings of (auto)mobility has been termed in academia and activism as *velonomy*. Studies highlight how such autonomy is not limited to *moving* with the bike, but necessitates also autonomous material engagements (e.g. bike repair and maintenance) and socio-cultural appropriation (Abord De Chatillon & Eskenazi, 2022; Mundler & Rérat, 2018). Importantly, rather than an individual 'asset' velonomy is a community level social mechanism that is collectively produced by people sharing skills, knowledge, materials and meanings to reorganise the local constellations of mobility. Not unlike prefigurative politics, velonomy connects action with deliberate reflection and criticism of prevalent hierarchies created in the politics of mobility (Rigal, 2022).

Mobility commoning

The notion of velonomy, then, begs the question of what kind of a system, regime or dispositif would be able to support self-reliant and pluriversal forms of cycling. To challenge the closed, self-reinforcing, path-dependent system of automobility that is exclusive of certain users and uses, velomobility is imagined as open-ended, malleable, escaping foreclosure and emphasising multiplicity of possible system arrangements (Cox, 2023). The apparent dilemma is that any system supplanting that of automobility would be susceptible of building its own path dependencies and hierarchies (Cass & Manderscheid, 2018). To avoid this, any such system would need to be highly sensitive to the different dimensions of justice – recognise people's differing situations, facilitate just processes and emerge from pluriversal ways of knowing cycling (Sheller, 2018). It demands flexibility and sensitivity towards extemporaneous and emergent forms justice (Nixon & Schwanen, 2019).

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11 As a disclaimer, here the critical realist underpinnings of the study certainly apply – not just anything can be construed or enacted, but possibilities of different realities rely on the functioning of 'real' social mechanisms.

Here, one of the most promising theorisations is mobility commoning (Nikolaeva et al., 2019; Sheller, 2018). Generally, it means rearranging the governance of mobilities through communal reconceptualization of what mobility means and how spaces and access are managed (Nikolaeva et al., 2019). What is especially relevant to this study, Sheller (2018; 2023) understands it not only as management of natural and material resources but also as assembling and gathering of *social* infrastructures *of* and *for* movement. Crucially, commoning is also effectively a form of prefigurative politics in enacting and reflecting on forms of cycling governance that do not (yet) exist.

Case selection

The study involves two action research processes in two different social, geographical and political contexts. In Creswell's (2010) terms, they deal with two very different constellations of mobility where children and young people's lack of autonomous mobility is problematised somewhat differently. In these respective contexts, the study seeks to explain why seemingly the exact same 'problem' – the locally defined deficit of youth autonomous cycling – exists among middle-class native youths in Jyväskylä, Finland and lower class racialised youths in the Amsterdam, the Netherlands. Because of the highly participatory methodology, in both case the initial problem statements of the participants are crucial starting points of research.

Case study 1 Jyväskylä, Finland

The first study took place in the Finnish municipality of Jyväskylä during 2020–2021. We created a government funded cycling project in collaboration with two local cycling advocate NGOs, municipality representatives and a local youth sports club community. The latter actor was crucial to connect the 'problem' of mobility with that of institutionalisation of childhood where children's organised leisure activities are a key. Thus, the main focus of the initiative was on children's journeys to organised activities that are notoriously car-dependent (Hjorthol & Fyhri, 2009; Wheeler & Green, 2019). In this project we co-created multiple experimental cycling initiatives for the local community of adults and children, leading to evolving rationalities and shifting representations of children's mobility.

In Finland, Jyväskylä is one of the cities that have taken important measures to develop and strengthen sustainable and active modes of mobility throughout the 2000s. At the beginning of the millennium, Jyväskylä was one of the municipalities participating in the Model Municipality for Sustainable Transport experiment (2002-2004), which was an important national pilot project for mobility management. Compared to other cities in the country active transport modes have been a strong feature of the

city's urban planning ever since. Importantly, there has been regular and continuous dialogue and cooperation between city decision-makers, transport experts and third sector organisations. In other words, the development of cycling and other non-car mobility is based on a network governance approach that integrates different sectors. In this context it was natural to organise a cross-sectoral action research project.

In this context, it is notable that the work focused on a predefined local community that was well known to me and my colleagues. The community was highly homogenic and shared quite similar values about childhood, mobility and parenting. The close-knit community setting allowed us to analyse how the shared *everyday experiences of mobility* were implicated in the governance rationalities and representations as people implementing the project had their own children also participating in the activities.

Case study 2 Amsterdam (Bijlmermeer), the Netherlands

The second study was conducted in Amsterdam in 2022–2023 in the historically marginalised housing estate of Bijlmer (short for Bijlmermeer) in Southeast part of the city. Here, the municipality was conducting a set of experimental cycling promotion projects together with local cycling advocates from variegated backgrounds. In Bijlmer, cycling rates are significantly lower than in the rest of the city and the majority of children and young people are from non-white migrant backgrounds. Hence, the cycling deficit of young people was problematised very differently than in the first study. As young people's cycling is not equitably distributed in the city that relies a lot on cycling, the problem of mobility becomes effectively a problem of urban citizenship. Indeed, Amsterdam is a polarizing city, which is also reflected in everyday mobility. The ethnic and class composition of neighbourhoods appears to be more important than spatial characteristics in explaining cycling rates (Nello-Deakin & Harms 2019).

Here the approach was more extensive and not focusing on one predefined community, which is why it did not seek to to instil the everyday experiences of mobility and cycling initiatives in the same sense as in the first study. The focus was more on the interactions between public 'cycling government' (civil servants, planners etc.) and the local civic actors to the study the functioning of the Amsterdam cycling program in the context of Bijlmer youths. Moreover, my respective role as an action researcher was more to facilitate, support and evaluate the experimental governance procedures than run them myself (which was the case in the first study).

Choosing cases in realist research

Principles of sampling and choosing cases is a hotly debated topic across social sciences. In realist research these aspects of designing and conducting research are

determined by the preoccupation to understand the social mechanisms that give rise to events, which is also the case in this study. Here, the task of sampling is to enable the building of causal, if tentative, explanations of how social mechanisms work in their contexts (Emmel, 2013). In explaining a realist approach to these issues, Emmel (ibid.) attests that neither the verb 'sampling' nor the noun 'sample' does justice to the acts of choosing cases in realist research. In this regard the purpose of research is not to establish cases as 'typical' or 'critical' but to explain the social mechanisms that sustain cases. Subsequently, realist case selection is a combination of internal and external influences.

The former means purposive work directed by initial theories and ideas. In this study it connects to what is said in the above about the marginalisation of youth cycling in the politics of mobility. Firstly, there is the global decline of children's autonomous mobility and failures of cycling policy, advocacy and research to facilitate the creation of just and equitable conditions for pluriversal pedallings. These ideas, in turn, were then reinterpreted against more contextual socio-spatial phenomena as how middle-class children end up leading lifestyles where they are chauffeured form one institutional setting to the next (Case study 1) and how lower class racialised youths are marginalised in mainstream cycling governance (Case study 2). In other words, the internal influence of sampling, in this case, was based on differential problematisations of children and young people's mobility in different socio-political contexts.

Regarding the external influences, I wanted to commit to continuous long-term collaboration with the actors (rather than conduct intermittent fieldwork), which meant that it was most efficient to have the case study sites close by, in this case in the cities where I was conducing my PhD trajectory. Still, beyond this form of 'convenience' sampling and practical research economy, there were of course many choices to make: where to focus, who to work with and how to organise my participation and observation in the actual projects. These aspects were, again, largely determined by the internal influences, that is, (theoretical) ideas about the politics of mobility. However, in realist case selection the internally influenced purposive work only sets the scene for the elaboration of the original, tentative ideas. The key of successful 'sampling' is to be able to build a system – in this case a set of experimental cycling initiatives – to test theoretical ideas with empirical evidence (Emmel, 2021, Sayer, 2011). Here it is also likely that the exact descriptions of cases will change throughout the research project, because it means repeatedly asking 'what is this a case of?' (Emmel, 2013).

Another thing is how individual (realist) studies can complement each other. In this respect the aim was not to establish a comparative case study with two 'similar cases' and controlling for all interfering contextual variables and issues. Rather the opposite,

the two studies highlight that the same problems, children's 'cycling deficit' and inefficiency of conventional cycling promotions efforts to promote it, can be caused by very different social dynamics. Also methodologically, the two studies highlight how realist action research can produce very different designs. And still, I argue that they are compatible and complementary because they explain the functioning of complementary *social mechanisms* (velonomy and commoning) that also work together. The first case study created an in-depth understanding on the highly relational dynamics of how children and young people's autonomous mobilities emerge, and the second one used these ideas in a different context and wider scale. These aspects are further elaborated in Chapters 2 and 7.

Thesis overview

The thesis consists of four papers, Chapters 3-6, that have been published or sent for publication as self-standing works. They are necessarily fragmented, which is why the whole is elaborated here and in the concluding chapter. In some instances, Chapters 3-6 also use concepts and terms discussed here interchangeably with others[12].

Additionally, **Chapter 2** explains the theoretical-methodological framework of the study. This means but a metatheoretical account on its ontological and epistemological commitments also, more concretely, what is referred here as social mechanisms as it is key for understanding the arguments made in the following chapters. In other words, Chapter 2 puts the conceptual framework developed here in dialogue with realist concepts and operationalises it with realist action research methodology.

Chapter 3 provides a more practical methodological account on the application of realist action research in cycling research. It makes the case for prefigurative politics as a key guideline for such research processes and sets the scene for subsequent chapters that delve more deeply into the two case studies aiming to prefigure childhood velonomy and velomobile commons. Still, the argument of the chapter is constructed around empirical materials created in the case studies, namely accounts of children and young people who were involved in the experimental cycling initiatives.

Chapter 4 and **Chapter 5** should be considered a divided publication. The former explains how, in the course of action research process, the initiatives allowed for child velonomy to emerge as a cycling governance rationality based on a highly social and

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12   E.g. velonomy does not appear in Chapter 4 even though it effectively establishes it as a governance rationality. Also, Chapter 3 uses the term 'social cycling innovations' instead of 'experimental cycling initiatives' to point connections with social innovation research (Moulaert et al., 2016).

agentic representation of the cycling children. The latter explains the same change process from the perspective of parenting by describing parent's shifting representations of children's mobilities and why they made a difference in this context.

Chapter 6 describes the action research process in the second case study. The focus here is not on people's experiences of the cycling initiatives but on their governance among diverse actors. This chapter instigates and studies mobility commoning as a governance rationality and its dependence on the locally contingent representations of cycling children.

Chapter 7 offers concluding remarks and reflections on the study as a whole. It synthesises the findings from the two case studies by inferring how the mechanisms of velonomy and mobility commoning can work together.

Table 1 depicts the structure of the thesis respective to research objectives, questions, key conceptualisations and empirical materials.

	Objective / subtask	Research questions	Theoretical insights	Case study / participants / data
Overall	*Prefigure and explain forms and governance processes of youth cycling, that are marginalised in power-laden, locally contingent and discursively shaped constellations of mobility*	What social mechanisms do the experimental cycling initiatives trigger to actualise rationalities and representations of youth cycling that counteract hegemonic practices and discourses?	See figure 1 for the conceptual framework.	n/a
Chapter 2	**Subtask 1** *Explain how research can become part of the empirical field it seeks to study by coupling critical analysis of mobilities with disruptive practical action*	n/a	Metatheory of social mechanisms	n/a
Chapter 3	**Subtask 1** *Explain how research can become part of the empirical field it seeks to study by coupling critical analysis of mobilities with disruptive practical action* **Subtask 2** *Explain why certain types of cycling and cycling initiatives work for certain youths in certain contexts*	What social mechanisms do the experimental cycling initiatives trigger to actualise rationalities and representations of youth cycling that counteract hegemonic practices and discourses?	Prefigurative politics	1 & 2 / children and young people involved in the initiatives / interviews and focus groups
Chapter 4	**Subtask 2** *Explain why certain types of cycling and cycling initiatives work for certain youths in certain contexts*	1. Why can velonomy produce governance rationalities and representations that challenge car-dependence in the context of socio-spatially institutionalised childhoods?	[Prefiguration of] childhood velonomy; rationalities and representations	1 / local cycling governance stakeholders and a youth sports club / project materials; interviews
Chapter 5	**Subtask 2** *Explain why certain types of cycling and cycling initiatives work for certain youths in certain contexts*	1. Why can velonomy produce governance rationalities and representations that challenge car-dependence in the context of socio-spatially institutionalised childhoods?	[Prefiguration of] childhood velonomy; representations	1 / parents of the children involved in the initiatives / interviews; focus groups
Chapter 6	**Subtask 2** *Explain why certain types of cycling and cycling initiatives work for certain youths in certain contexts*	2. Why can mobility commoning produce governance rationalities and representations that provide equal opportunities for cycling in the context of socio-spatially marginalised youths?	[Prefiguration of] velomobile commons; rationalities and representations	2 / local cycling governance stakeholders / project materials; interviews

Table 1 Outline of the thesis (author).

Chapter 2

Realism, action research and mobilities

In this chapter I explain the scientific context of the study and why I used realistic action research methodology. The motivation for this elaboration is threefold. First, it is to explain the procedures and research designs of realist research derived from the metatheoretical system of critical realism (Ackroyd, 2009; Emmel et al., 2018; Pawson & Tilley, 1997). Second, there has been no room in individual publications to explain these underpinnings, which is why I want to provide readers with appropriate signposting. Third, realist methodology has not been explicitly discussed in mobility research, but for example Sheller (2014) has acknowledged this potential by arguing that methods of mobilities studies should be considered in dialogue with realist social theory (Archer, 1995). To these ends the chapter discusses how the philosophical system of critical realism can be applied to action-oriented and reflexive social research and mobilities research more specifically. Here, realists would argue that the social practice of doing research is contingent with its institutional context (Sayer, 2004, 13-14), which, for the sake of completeness, deserves a short note to begin with. This context has been distinctly interdisciplinary, which has everything to do with both realist and mobilities research.

The study is conducted as a joint effort between University of Jyväskylä in Finland and the University of Amsterdam in the Netherlands. In the former institution the work has been embedded at the Social Sciences of Sport at Faculty of Sport Sciences, where mobilities research builds on a tradition of sport sociology discussing physical activity, movement, locomotion and embodied (sub)cultures (Itkonen, 2021). Like my own work, this strand of research has often focused on the interaction of public and third sector organisations in assembling physical and sporting cultures and laid emphasis on place and space (Itkonen, 1996; Itkonen et al., 2010). At the University of Amsterdam, the work has been conducted at the department of Geography, Planning and International Development Studies. This organisational context facilitated further insight from the perspectives of urban planning, human geography and mobilities. Moreover, the study was originated in the project called Healthy Lifestyles to Boost Sustainable Growth (STYLE) funded by Strategic Research Council at the Academy of Finland, that constituted the third context of interdisciplinary considerations.

Interdisciplinary social science and critical realism

Because of its origins, the project is an example of increasing focus of governments in mission-oriented interdisciplinary research and innovation policy, where proposals are solicited on predetermined topics that demand urgent science-based solutions (e.g. the sustainability crisis and the contingent complex societal transitions, see Larrue, 2021; Mazzucato, 2018). Focusing on specific problems and change, this type of research is

supposed to provide relevant and actionable guidance for policies, programs and interventions to mobilize resources, coordinate stakeholders, and stimulate innovation and collaboration across sectors to tackle the identified challenges. Pressing and complex issues regarding sustainability, health and inequality, and the associated research policy demand knowledge that transcend the boundaries of individual disciplines. There is a call for multidisciplinary, interdisciplinary and transdisciplinary social science, where methods and concepts from individual disciplines are collated together to build more comprehensive understandings of the phenomena at hand (Aboelela et al., 2007). At the most elaborate level such work is transgressing established boundaries, creating new languages and networks of researchers (ibid.). In addition to breaking out from disciplinary siloes, there is a parallel call to involve social actors from outside of academia in the knowledge creation and application processes. To account for the variegated lay and expert stakeholders' ways of understanding the world, some argue that the whole knowledge creation process should be moved (at least symbolically) outside of the universities to the actual contexts of the application of knowledge.

These two principles have been perhaps best manifest in the project of Gibbons, Nowotny and colleagues in their famous 'Mode 2' pragmatic transdisciplinary research. Mode 2 research should be able to – compared to more conventional and disciplinarily bound social science – better grasp the complexity of the issues that humanity is facing but also fortify the social justification of social research (Gibbons et al., 1994; Nowotny et al., 2003). While research-as-usual (to borrow the term from Emmel, 2021) has traditionally built on the hegemony of separate disciplines, hierarchies between them, the special role of scientific institutions in the production of knowledge and the strong autonomy of scientists, pragmatic transdisciplinary research is characterised by multidisciplinary problem-orientation, reflexivity, knowledge production in the context of its application and new criteria for quality control. This paradigm has been celebrated as a response to criticism regarding the disconnection of scientific knowledge from policy making and the everyday life of organisations and communities –in short, the lack of societal impact.

Whereas transdisciplinary work demands transforming the notion of scientific knowledge (e.g. produced by expert disciplines with established methods) the incorporation of social actors outside of academia represents another, even more radical leap away from science-as-usual. This also demands re-evaluating the hierarchical relations between lay, expert and scientific knowledge. Emphasising the need to account for the plurality of viewpoints, knowledges and voices in addressing social problems often logically leads to the application of co-creative and participatory methods, which is also the case in my action research study. Especially regarding transitions in urban planning and geography, action research (often overlapping with evaluation

and policy analysis) is an increasingly applied methodological framework to produce transformative knowledge through co-creation, experiments and social innovations (Aiken, 2017; Bartels & Wittmayer, 2018; Wittmayer & Schäpke, 2014; Wittmayer et al., 2014).

However, uncritical appraisal of participation risks leading to its tyranny (Cooke & Kothari, 2001). In these instances research may be unable to recognise different actors' and accounts' relative credibility and meaning for transformations. Perhaps we can say that everyone with a stake in a transition should be heard but these viewpoints are hardly equally capable to tell *why* and *how* change happens. Emmel (2021, 103) criticises pragmatic transdisciplinary approach: 'the inevitable contestation of what constitutes a credible science agenda, the rigour of scientific method and what may or may not be valid claims from science are not directly addressed in the pragmatic methodology of transdisciplinary science'. While pragmatic transdisciplinary research can describe diverse actors' viewpoints on what needs to be done in given social projects or interventions, it 'cannot adjudicate explanatory questions of value and transformation' (ibid). To address this impotence to create explanatory, rather than descriptive claims on *why* certain ways of doing policy, planning and interventions are better than others, Emmel proposes the move to post-disciplinary realist social research stemming from the philosophy of critical realism.

Critical realism is a philosophical branch incepted in the 1970s by Roy Bhaskar (2008; 2015). It is a metatheoretical framework for both, social and natural science with rich ontological and epistemological elaboration but also practical methodological guidance. It takes a stand not only on 'being' and 'knowledge', but also more broadly on the nature and goals of scientific activity. As a growing and debated field critical realism has also evolved in multiple directions. Here, I refrain from profound philosophical discussions and merely outline the basics of the original form of critical realism that Bhaskar developed explicitly as an 'underlabourer' for practical research. I combine these insights with respective features of mobility studies to explain how realism, together with mobilities research, provides the theoretical-methodological framework for my study and make the case of realist action research as a 'mobile method' (see Büscher et al., 2020; 2011; Fincham et al., 2009).

Explicit dialogue between critical realism and mobilities research is largely lacking (however see, Freudendal-Pedersen, 2009; Freudendal-Pedersen et al., 2010). Still, one could argue that a large part of mobilities research is implicitly realist. When drawing together key insights on how the mobilities paradigm differs from earlier approaches, Sheller (2014) suggests for mobilities research to seek grounding in realist relational ontology to transcend old debates and bridge disciplinary boundaries.

In concrete terms her argument revolves around mobile methods, developed in the mobilities paradigm to better grasp fleeting and ephemeral phenomena of moving people, materials and ideas. Mobility research being this way 'attentive to its own emergence' and 'constitutive of the empirical 'field' is effectively reconceptualizing the idea of the empirical and reconfiguring the relationship between observer and observed (ibid., 803-804). Sheller suggests that mobile methods and mobility studies should be considered in dialogue with critical realist social theory, that emphasises emergent processes and relationality and the (realist) interplay of structure and agency (Archer, 1995). Partly, the aim of this study and this chapter more specifically is to display the practical applicability of these insights[13].

Basics of realist research

When starting to look what critical realist theory of science is about, one often first faces statements on what it is *not* about or what it has been a reaction to. On one hand critical realism has formed as a response to the crisis of positivism and, on the other, to disappointment to some positions of postmodernism and radical social constructivism. Regarding the former, realism criticises overly confident approaches to social research, where scientists claim to establish universal causal laws and portray research as a linear progress. Regarding the latter, it criticises the defeatist postmodernist approaches that dismiss any chance of progress in and through social research. I briefly discuss these issues to give some essential background to my overview of realist research principles and their methodological implications.

As the name has it, critical realism posits *real* social mechanisms – structures, powers, liabilities, dispositions etc. – that exist independent of our thinking. Yet, it simultaneously has a *critical* stance towards any notion of absolute or definite knowledge regarding these mechanisms. Bhaskar (2008) clearly demarcated critical realism from empirical realism which assumes that all reality consists of directly observable and measurable phenomena. In a nutshell the realist critique of empirism is this: if we argue that the purpose of sciences is to inquire and establish universal event regularities and linear causal laws between events, this also leads to positing that social phenomena occur in universal regular patterns, and that reality consists of clearly delineated entities that are not altered when interacting with other entities (e.g. Buch-Hansen & Nielsen 2020, Sayer, 2000). Such an account might seem like a position that would not be *explicitly* advocated by contemporary social researchers but for example Kurki (2008) has described how *implicit* positivist understanding of causation is still prevalent contemporary social research. Similarly, Buch-Hansen and Nielsen (2020) point

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13   On the philosophical side, Thomas Nail has developed an ontology of mobility in his book Being and motion (2018).

out positivist tendencies in fields such as behaviour change research and mainstream economics and portray them as counter-images to realist research (in the field of urban planning see Davoudi, 2012). To realist mobility research such counter images are arguably found in solutionist, interventionist and behaviour change studies in the fields of transport and health promotion (c.f. Cox, 2023), that posit non-dependent 'solitary mobile subjects' and construct mobile people as unconstrained rational utility maximisers (Manderscheid, 2014). One could even say that the inception of the mobilities paradigm as a reaction to one-dimensional positivist and technocratic transport research is in many respects analogous to the inception of realism (Sheller & Urry, 2006; Urry, 2007).

Contrasting empiricism, critical realists attest that the social world is a complex open system where we cannot conduct controlled laboratory-like experiments, expect event regularities or establish universal causal laws (Sayer, 2000). Conditions vary across time and space, and entities are also prone to change when they interact with each other. Subsequently, social processes are contextual and our knowledge about them is always fallible and less-than-absolute – reality is always deeper and richer than our understanding about it in given point in time[14]. However, despite this critical stance, realism refuses to resort to relativism. As held by Sayer (1993), moving from one extreme to the other – from foundationalism to idealism or from grand universal narratives to cultural relativism and 'local knowledge' – is not resolving anything. This is why critical realism is often portrayed as a carefully articulated 'middle way', reflexive of its philosophy and methodology and its social and political coordinates when faced with complexities of the open-ended, but 'real' social world. Thus, critical realism can be regarded as a specific form of weak social constructivism that allows for the meaning of ideas and discourses, but also for objective structures and (non-linear) causal claims. Indeed, the focus should not be in defending contradicting positions between postmodernist and critical realism, but to bring their viewpoints into constructive dialogue (Rutzou, 2017; Sayer, 1993). All this is further clarified when discussing the actual ontological and epistemological positions and subsequent logic of inquiry and inference.

Ontology, epistemology and logic of inquiry in realist research

Starting with ontology, critical realists attest that reality is stratified and consists of three different domains: empirical, actual and real (Bhaskar, 2008). The most superficial is the *empirical* domain, that includes people's experiences and direct observations of events. The second, *actual* domain, consists of causal events and phenomena that are partly observable. The third domain, called the *real or the deep* domain, consists of social mechanisms that are not directly observable but that trigger and create the

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14   Bhaskar (2008) discusses this in terms of *intrasive* and *transitive* dimensions of reality.

conditions for events. Regarding mobility, we could say for instance that mobility practices[15] are *actual* phenomena, that are actualised by more profound *real* social mechanisms as liabilities, structures and dispositions that play to together to create 'motility', i.e. capacities to move (Kaufmann et al., 2004).

This means that while researchers are predominantly reliant on people's empirical experiences, they are not the same as the actual events and phenomena they are experiencing and observing, which are again not the same as the profound mechanisms that they emerge from. Bhaskar depicted realist ontology as a table that summarises how real mechanisms exist independently of events and are necessarily 'out of phase' with them. Similarly, people's experiences are 'out of phase' with actual events, and can, for instance, be misidentified.

	Real	Actual	Empirical
Experiences and observations	x	x	x
Events and phenomena	x	x	
Mechanisms	x		

Table 2 Domains of critical realist ontology (applied from Bhaskar, 2008, 3).

Crucially, the mechanisms do not constitute universal event regularities. Rather than law-like sequences they are causal capacities, functional tendencies, potentials and risks that are altered by social contexts. They can also work together with other mechanisms or remain totally unexercised. Hence, instead of linear causality, realists advocate the notion of *generative causality*, where structures, powers, liabilities and dispositions work together in complex and unobservable ways to give rise to events (which is why they are often called generative mechanisms). This also means that for realists, the world is not rigid and predefined, but malleable and very hard to predict. Thus, it is crucial to note that the concept of mechanisms does not suggest 'mechanistic' or linear understanding of social phenomena, rather the contrary.

Secondly, this ontological realism is coupled with epistemological relativism, meaning that knowledge (of lay people, experts and scientists alike) is socially produced and dependent on languages, discourses and concepts. Along with the relationality and complexity of unobservable generative mechanisms this means that scientific knowledge is always fallible – our understanding of the 'real' mechanisms is always an imprecise construction. Yet, as the opposition to 'defeatist postmodernism' holds (Sayer, 1993) this does not mean that all explanations are equally worthy. All knowledge is

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15   Practice theories are widely applied in mobility research. Despite their merits, for example Schatzki (2016) has criticised them for advocating a flat ontology, that would make them incompatible with critical realism. I do not engage with practice theories in my study and these discussions remain outside of its scope.

fallible, but some explanations are better than others and researchers have methods and means to prove that. This third principle reconciling ontological realism and epistemological relativism is called judgemental rationality and it bears that the task of social researchers is to produce rational grounds for choosing which explanations are most truth-like (Porpora, 2015, 73).
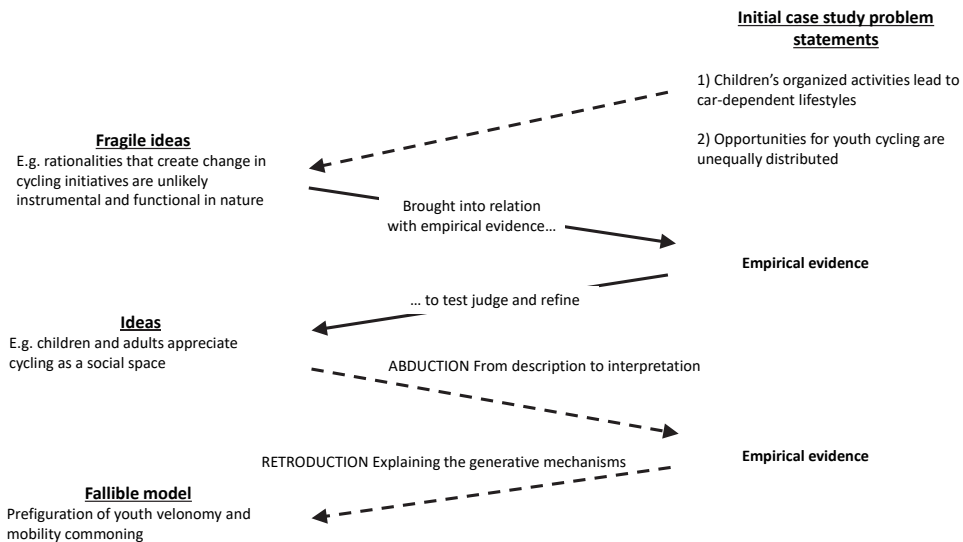
Given these principles, the logic of inference in post-disciplinary realist research is a combination of retroduction and abduction (Emmel, 2021). While deductive inference, bluntly put, moves from the general to particular and inductive inference the other way around, retroduction means explaining states of affairs or 'outcomes' (e.g. lack of young people's autonomous mobility) through mechanisms and processes that produce them or are conditions for them. Put another way: the researcher has observed something in the *actual* level of reality and is now 'thinking backwards' and asking the question of what brings it about (Peirce, 1958). Asking these so-called *transcendental questions* is then followed by describing theorisations on the unobservable mechanisms that give rise to observable phenomena and these 'hypotheses' are tested through empirical research[16]. In result, the realist research processes involve multiple 'zigzags' or 'cycles' between empirical evidence and theoretical ideas, where fragile ideas gradually become more concrete and coherent, but always remain fallible (Danermark et al., 2019; Emmel, 2021; Sayer 2000).

Given this, theory is an inseparable part of realist inference and inquiry when aiming to explain mechanisms 'behind' and 'below' phenomena and events (Blaikie, 2003). While crucial parts of social reality are not actualised or experienced in observable form, we must use the more superficial levels of reality to test our theories about them or, as put by Pawson (2006), to seek 'nuggets of evidence' on generative mechanism. In terms of concrete inquiry this means starting by observing regular patterns of interactions and events and identifying their key components; then abstracting and retroducting the relevant social mechanisms; and then again testing their validity empirically (Danermark et al., 2019). Put another way: the research process seeks for 'continuous confrontations between what is observed and experienced on one hand, and scientific explanations or models of reality on the other hand', so that 'ideas on the complex interplay of processes can be specified, adjusted, or rejected' (Boonstra & Rauws, 2021, 306). Here, best theories and concepts are not true but truth-like: they are attempts to speak truthfully about the real entities lurking behind perceptions. As will be discussed below, in realist evaluation and action research this means that norms

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16   Furthermore, in realist action research the identification of mechanisms is coupled with acting on them. As there are often multiple mechanisms at work simultaneously, the idea is to counter oppressive mechanisms and activate enabling mechanism that produce just, emancipatory or otherwise desired outcomes (Houston, 2010). Thus this model does not grasp the complications following from participatory and action-oriented methodology, that are discussed below

concerning the causal relations between social ends, say children's cycling, and means, say bike-to-school schemes, are more or less true.

Initial case study problem statements

1) Children's organized activities lead to car-dependent lifestyles

2) Opportunities for youth cycling are unequally distributed

Fragile ideas
E.g. rationalities that create change in cycling initiatives are unlikely instrumental and functional in nature

Brought into relation with empirical evidence...

Empirical evidence

... to test judge and refine

Ideas
E.g. children and adults appreciate cycling as a social space

ABDUCTION From description to interpretation

RETRODUCTION Explaining the generative mechanisms

Empirical evidence

Fallible model
Prefiguration of youth velonomy and mobility commoning

Figure 2. Emmel describes post-disciplinary methodology as a zigzag where empirical observations are put in dialogue with theoretical ideas. The figure exemplifies this process in the context of this study (Emmel, 2021; also Lakatos, 1976).

Discourse and social change

The idea of fallibilism and incompleteness of our knowledge is often associated with the Kantian view that conceptual systems strongly influence the formation of knowledge (which is why we need to ask *transcendental questions*). Realists agree that social phenomena are necessarily concept-bound and observations of them are based on theoretical ideas, but given the ontological realism, language and communication are not incidental to the phenomena to which they refer. In other words, observations are imbued with (theoretical) ideas and ideas are imbued with observations (Barnes et al., 1996). Especially as action research relies always on language use, it is important to elaborate how social constructions and meanings play out in realist research; how are the relations between discursive and non-discursive aspects of social life (e.g. practical experiments and their meanings to people); and especially, how change and transformation can be facilitated in the interactions between these elements.

People's interpretations of the world and the non-discursive organisational, institutional and material forms emerge through different but interrelated processes – the former are *construed*, and the latter are *constructed* (Sayer, 2000; 2004). They are necessarily entwined, which is why interpretative understanding and causal explanation

must go hand in hand in realist research. As many realists like to repeat, 'reasons can be causes'. Yet, while it makes perfect sense to consider that discourse has causal consequences, the understandings of *how* language can trigger changes in the world that is more-than-discursive is a complex question. Reasons can be causes, but they are also (mis)interpreted, and construed differently by different people (ibid.). In my study and mobilities research more broadly, it would be absurd to deny the meaning of language in changing mobility governance and practices (e.g. Doughty & Murray, 2016), but at the same time for example information on the wellbeing benefits of cycling has differential impacts on different people[17]. There is much more to the relationship of critical realism and semiosis (making of meaning) than that reasons can be causes, the first one being that 'reasons' are not singular entities and how they resonate with different participants are not universal, but contextual and differential processes (Fairclough et al., 2002).

Critical discourse analysis (CDA), predominantly the form advocated by Norman Fairclough (2003; 2013), offers a comprehensive framework for understanding these issues. The key point of CDA is that discursive structures and practices are, like their non-discursive counter parts, embedded in social contexts, which is of course the precondition to ascribe causal power to them (Chouliaraki & Fairclough, 2021). *Construal* and *construction* both attend to structuration, meaning that discursive and non-discursive structures become relatively independent once they take shape. So just as there are objective social structures (e.g. social institutions) there are also objective semiotic structures that are real independent entities, even when not actualised. These *semiotic orders* consist of various elements[18] and actors' discursive room for manoeuvre is dependent on them (indeed, not just anything can be construed in any context). Following the realist notion of structuration (Archer, 1995; 2000), discursive structures pre-exist any actions and actors deploying them but are simultaneously dependent on their reproduction (Newman, 2020). In other words, there are limits to the agency of actors, but their agency is always either reproducing or (gradually) changing the prevalent structures. Moreover, structuration is always further complicated by the fact that discursive structures are networked with non-discursive structures and practices. Texts, as individual semiotic facets of social events, can change these relationships, which may lead to changes in practices and their underlying structures (Fairclough. 2013).

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17   Focusing on the uses of language in both case studies, I wish to highlight how changes in and through mobility governance are simultaneously dependent on discourse and action. E.g. in Chapter 5 I explain the actual change in mobility practices predominantly through changes in parents' representations of children's mobility but simultaneously note how they were facilitated by material and non-discursive socio-spatial relations and operationalised in non-discursive practices.

18   Fairclough makes the distinction between genres, discourses and styles, but I don't engage with these concepts in my research. My key concept is representations as defined in Chapters 1, 4, 5 and 6.

The key point for my study is that CDA is not solely explaining the making of meaning (semiosis) but also the relations between semiotic and other social elements as social and institutional relations and roles. Discourses and representations can be operationalised, for instance, through their enactment as modes of conduct; inculcation in identities; and objectification or materialisation in organisational practices and build infrastructures (Fairclough, 2013; Fairclough et al., 2002, see Chapter 5). However, it is always the constellations of relationships between actors, language, texts, social relations and practical contexts that dictate if semiotic causal powers are actualised or not. Just like other mechanisms, semiotic mechanisms are real, even when they are not exercised and the relative weight of discursive and non-discursive elements is also crucial (Fairclough et al., 2002)[19]. Coming back to the realist logic of inquiry, CDA provides a discourse theoretical account that allows to study the dialectical relations between discursive and non-discursive phenomena according to the global realist logics as discussed in the above.

CDA is central to the definition and operationalisation of my key concepts: representations (language) and rationalities (practical actions, organisation and procedures) of cycling governance. Rationalities and representations emerge from the dialectical interactions between discursive and non-discursive mechanisms and allow the simultaneous analysis of how different actors *represent* their ways of organizing and governing cycling, *and* how they practically do it. The experimental cycling initiatives under investigation necessarily entail construal (fallible discursive construction) and construction (material and organisational form), and the relative success or failure of these depend on how well they respond to the properties of the broader social context (Fairclough et al., 2002). As will be clear in below, the operationalisation of these concepts in turn demands flexible combination of different methods, because: 'depending on the explanandum, it may be necessary or appropriate to supplement critical discourse analysis through more concrete analyses of extra-discursive domains': (ibid., 23). Indeed, realists often appropriate and combine different methods based on the research problem at hand (Reed, 2009).

Applying post-disciplinary realism in post-disciplinary mobilities research

The philosophy of critical realism and realist social research do two things that are important for the methodology of this study. They, firstly, provide firm rational grounds and legitimisation for participatory and action-oriented social research that

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19   In my study there are indeed important differences between different actions taken during the research processes: some are predominantly semiotic and others straightforwardly material.

is not based on the 'tyranny' of participation, but seeks to raise above the participants' empirical observations and worldviews without essentialism (Emmel, 2021). Second, and contingently, realism makes it tenable to evaluate and critique the functioning (not only outcomes) of policies, programs and projects[20] aiming for social change, i.e., the causal relationships between means and ends. As far as the aim of realist social science has been to increase the social relevance of research by showing that it can provide explanations, not just descriptions, applied realist research (or 'realist applications' or 'realist approaches', see Ackroyd, 2009) put these explanations to work by evaluating existing policies and governance practices. This, in turn, can be coupled with helping actors to change the programs subject to study through action-oriented approaches.

Yet, the general principles of the philosophy of critical realism do not provide a stepwise or methodologically rigid account on how to study issues like the social mechanisms promoting children and young people's cycling. To the contrary it is not unfair to say that realists are rather disillusioned by questions of methodological orthodoxy and mostly interested in the abilities of any method to help in theory building and refinement (Emmel et al., 2018). The specific constellations of theory and method to explain the in-depth social mechanisms depend on the research problems and contexts. In this section I situate my study in the wide spanning field of applied realist research, that has become a prominent movement showing the relevance of realist ideas in not only research but also actual policymaking and governance of social programs (Carter & New, 2004; Emmel et al., 2018; Fleetwood & Ackroyd, 2004).

Realist applications and research designs

Realist (or realistic) applications refer to methods, such as evaluation, policy critique and action research, that have a very direct relationship with social policies, programs, plans and projects they study. Starting to discuss this field would be difficult without referring to Ray Pawson and Nick Tilley's book *Realistic evaluation* (1997). The 'bad boys of evaluation methodology' (Tilley, 2018) laid down a comprehensive argument why evaluation – the valuation and assessment of myriad societal activities – has become such a prominent part of the governance of contemporary societies and as such must seek for a firm ontological and epistemological basis. They make painfully clear the flaws of classic experimental research designs (randomised control trial), positivist assumptions in the evaluation of social programmes and subsequent overly confident and simplified claims on 'what works' (e.g. for crime prevention, health promotion etc.). Importantly, these flaws concern both, the implicit theory about behaviour of human actors *and* the methodologies to study it. In many fields experimental approaches have produced a disappointing 'mixed bags of findings', that realists would

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20   In my overview I refer to cycling 'initiatives', but here use the term 'programs' for consistency with the key literatures.

explain by relational and contextual generative causality (for mixed results on children and young people's active mobility see Larouche et al., 2018; Jones et al., 2019; Villa-González et al., 2018). Once 'out with the old', Pawson and Tilley explain the fundaments of realistic evaluation, where the above naively simple question of 'what works' turns into 'what works for whom under what circumstances and why'[21] (see also Pawson, 2006; 2013). This question reflects the above discussed complexities regarding generative mechanisms, dialectics of discursive and non-discursive factors and realist notion of structuration.

The evident starting point for realist evaluation and other applications is that social programs are real with real consequences (they can also be almost solely discursive, e.g. therapy, as is apparent in the above discussion on CDA). At the same time, they are not (or should not) based on 'some elemental, self-explanatory level of social reality which can be grasped, measured and evaluated in some self-evident way' (Pawson & Tilley, 1997, xiii). Social systems where projects and programs try to create changes are open (Bhaskar, 2015) and morphogenic (Archer, 1995) in nature, meaning that 'the balance of mechanisms, contexts and regularities which sustain social order is prone to a perpetual and self-generated reshaping' (Pawson & Tilley, 1997, 72). An important complication here is that people subject to programs tend to give meaning to events and interpret them in unforeseeable ways, which in turn makes a difference in the eventual impact of the program (reasons can be causes). To put this into my research context, mobility systems too are open in nature and mobilities are multiple, differential and relationally assembled (Urry, 2007). Mobilities matter to people as social practices, they are imbued with meaning, and they can make people suffer or flourish (Freudendal-Pedersen, 2022; for a realist account see Sayer, 2011).

Notably, realist approaches are not aiming to describe or 'measure' the outcomes of programmes but explain how they function. This is based on the notion that if research is more focused on the generative mechanisms than the end results, studies can better inform policy and practices on what kinds of actions are likely to yield desired results in given contexts and circumstances. This is a radically different notion comparted to so-called black box evaluation, where evaluators make no claims about what are exactly those social processes that make or break the interventions at hand. Here, the rather complex principles of critical realism can be elegantly depicted as a function where generative mechanisms work in a social context that creates some sort of outcome or regularity[22]:

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21   Or for example 'for whom does this work, in what contexts, in what respects, to what extent and how?' (Westhorp, 2016).
22   This is the very basic version of the function and the eventual outcomes are also evidently shaped by aspects like time and human agency (Houston, 2010).

context & mechanisms => outcome/regularity

Figure 3 These configurations explain how regularities emerge and how they can be changed (Pawson & Tilley, 1997, 55-82).

In practice, this function is a theoretical abstraction, yet again highlighting the preoccupation of realists with the real mechanism (rather than experiences or patterns of events) and retroductive inference. By now the reasons for this are obvious but perhaps worth spelling out: studies need to understand what generative mechanisms determine the social behaviours and conditions that programs wish to change; they need to point out other mechanisms (or tendencies) that would be conductive of the ends of the program; they can seek to trigger those mechanisms through action; and then again evaluate whether the actions produced the right outcomes or if understandings need to be refined. Simply put, mechanisms determine how a program, policy or other intervention works out in a given context and the research question following from this is: 'what are the mechanisms for change triggered by a program and how do they counteract the existing social processes' (Pawson & Tilley, 1997, 75)[23]. The exact use of theories – or ideas – depends again on the research context, but a key thing is that these abstractions are never overarching and all encompassing. Yet, they still refer to something more-than-empirical and directly observable. This is why realists have largely adopted Robert K. Merton's (1957) term 'middle range theory' which he coined to simultaneously criticise sweeping grand narratives and the impotence of empiricism[24]. Another very clearly delineated way of using theory in applied realist research is by developing and testing so-called program theories. These are actors' interpretations of *why* the program is needed, *what* it contains and *how* it actually produces the desired outcomes. All these aspects make claims about generative mechanisms, which is why depicting a program theory is often useful especially in the first stages of the research (Marchal et al., 2018). In sum, despite being an 'applied' form of research, realist applications are no less theoretical than the rest of realist research. Theoretical thinking is the single most important success factor of realist approaches, not only because of its capability to provide explanations for social research but because they can inform and change programs *practically*. This is clearly depicted in notions such as 'a program evaluation can only be as good as the theory that underpins it' (Pawson & Tilley, 1997, 83) and 'there is nothing so practical as good action research' (Friedman and Rogers, 2009).

Despite methodological eclecticism, realist studies and applications tend to favour certain research designs over others, because of their distinct requirements for expla-

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23   See the main research question in Chapter 1.
24   However, as Boudon (1991) points, outside of sociology these are simply called 'theories', which is why there is nothing special about middle range theories as such. The term implies more how they should be used than what they contain.

nation (Ackroyd, 2009; Emmel et al., 2018). Firstly, realist approaches often demand some sort of a process orientation that enables the researcher to adjust the methods and objects of analysis as the project unfolds. Secondly, realist applications come across most of the time as 'case studies', meaning that the research designs are based on sustained observation (and participation) of organisational and social practices in a particular location or setting. So, realists tend to favour prolonged, close observation of people, interactions and organisations, not unlike ethnographers (Porter, 1993; Reed, 2009)[25], to understand the general patterns and events, redirect the observations based on accumulating knowledge, to clarify relationships between actors and to study the differential meanings they attribute to events (Danermark et al., 2019).

Here it is notable that, despite the strong preference of explanation over description, many realists do not consider quantitative or statistical research regularities redundant but see that they can be important in the *initial* stages of the study. Realists are interested in general regularities and patterns as primary cues on what is happening, and this type of research evidently does things that the in-depth explanatory research on mechanisms is uncapable of. Yet, it is crucial to understand the differences between the two as this has important methodological implications. For example, the motivation of this study stems from the generic decline in children's autonomous mobility in the western world, the inequitable outcomes of cycling policy and advocacy and the ineffectiveness of 'behaviour change' cycling promotion schemes. But the point is that such actualised event regularities are not essentially related to causation that happens in the real, generative domain of reality: [w]hat makes things happen has nothing to do with whether social scientists have plenty of regular instances to quantify' (Sayer, 2004, 11). Hence, the widely embraced assumption that surveys, statistics and established (quantitative) methods are 'explanatory' and case studies and intensive qualitative methods are 'exploratory' is actually the other way around in realist research, because generalisations are not based on the patterns of events but conceptually constructed and empirically corroborated mechanisms – at least as far as the 'same mechanism is recognizably operative in many similar situations' (Ackroyd, 2009; 534)[26]. What is more, and especially relevant for action research, descriptive research has little to say about what is possible in terms of change – in redirecting and changing prevalent and active generative mechanisms.

This study as a realist application

So, realists prefer certain types of research designs, but given all the variegated implications of critical realism to applied research, there are also important differences

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25   For instance, my first case study process lasted for 18 months (excl. the COVID-19 restrictions) and the second one for around 11 months.
26   However, regarding these aspects realist researchers views may vary. No method is inherently explanatory or descriptive.

between them. The researcher might be more focused on the *mechanisms* than the *context* or adopt more *extensive* or *intensive* an approach. The former means creating more of a holistic explanation of the functioning of an organisation or a program and the latter focusing on more clearly delineated formative processes inside those entities. Another key issue is how actively and in what ways the researcher engages with the program, organisation or project it seeks to study (Ackroyd, 2009; in action research see Wittmayer & Schäpke, 2014). My case studies are situated along these lines in Figure 4. As both cases used action research methodology, they were highly 'active' and participatory compared to many evaluation approaches, meaning that the figure illustrates their relative features, not general positioning in the canon of realist applications. In the first case study, our research team was very closely involved in the planning of the experimental cycling initiatives (there would have been no project without our initiative). In the second one, I participated and supported existing initiatives.
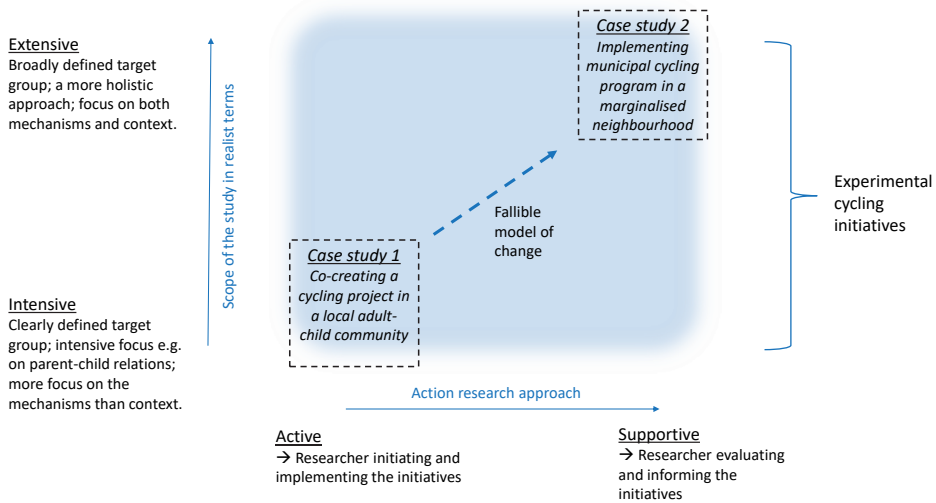
Figure 4 Realist view on the overall research design (author).

This overall research design illustrates the realist underpinnings of my work also on a more general level. As explained by Ackroyd (2009) comparative and extensive designs make more sense once we have identified relevant generative mechanisms and refined our understanding on them. Put another way, it is best to engage in more extensive studies with a fallible model (no matter how tentative) on how certain activities, interventions and programs work. While (primary) intensive research focuses on mechanisms, more extensive or comparative designs are equipped to analyse them *in context*. In my work, the first case study sought for evidence on what kinds of mechanisms (such as children's agency) are key for transformative co-creative cycling initia-

tives, which made the more extensive and supportive research design more sensible in the second case study[27]. Thus, while the studies build on each other, they have different means to take issue with the politics of mobility and transitions as explained in the introduction.

The action research approach

Crucially, different realist applications lay differential emphasis on change: how programs are able to change practices and behaviours, or, in turn, how programs themselves could be changed to yield desired outcomes. The point being made in action research is that researchers can, in favourable circumstances and on mutual agreement, team up with actors to actively interfere the social processes they observe to change prevalent relationships and institutions (Bradbury, 2015). Regardless of the other features of the research design, any deliberate confusion of action and research is what makes a realist application an action research study (Houston, 2010; Westhorp et al., 2016, also Kuusela, 2006).

Kurt Lewin is often merited as the initiator of action research as a scientific approach that simultaneously seeks to create knowledge on action and, in turn, act based on knowledge to create genuine interactions between research and the practical world (Adelman, 1993). It has become a widely applied methodology in research fields such as education (Efron & Ravid, 2019), social work (Houston, 2010), organisation and management studies (Altrichter et al., 2002), community research (Johnson, 2017) and, especially more recently, the study of societal transitions (Aiken, 2014; Bartels & Wittmayer, 2019; Bradbury et al., 2019; Hansen et al., 2016; Wittmayer et al., 2014). My study is clearly linked to the latter, but insights from all of these fields are relevant in methodological terms.

A cohesive definition of action research is hard to decipher and probably would not be even useful (Altrichter et al., 2002). When people claim to do action research, the term encompasses a vast amount of research and development practices spanning from very practical and non-academic development activities to moral-philosophical inquiries[28]. Still, as far as a basic definition is necessary, action research aims to mix practice and theory, to help people, organisations and communities change things that are deemed problematic, oppressive or otherwise harmful. Subsequently, large part of action research is explicitly focused on challenging hegemonic orders and promoting social justice by reconciling different ways of knowing and supporting their translation in new concrete practices (Kindon et al., 2007). Given this emancipatory potential,

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27 Moreover, I will elaborate in the concluding chapter on how the identified social mechanisms (velonomy and mobility commoning) can work together.

28 This is why I find my study more rooted in realist approaches than the tradition of action research as the former provides a far more clearly defined set of methodological premises.

action research is often operationalised to produce explicitly antiracist (Gebhard et al., 2023), antipatriarchal (Bradbury, 2023) and for example child-centric (Johnson, 2017) research approaches. Crucially, this often means that studies are conducted *with* not *on* the participants, complicating the roles and positions of traditional scientific disciplines (Bradbury & Reason, 2003). In practical terms, the collaboration with the researcher and the researched is often depicted as a cyclical process where action and reflection (or for example action, observing, reflecting and planning, see Westhorp et al., 2016) take turns on some sort of collaborative platform, usually facilitated by the researcher (see Figure 5).

Realism does not dictate the basic questions of action research like how participants are engaged, how data is (co-)created, what is considered 'action' etc., but is most concerned with the logics of inquiry and discovery (e.g. to counter the tyranny of participation, Cooke & Kothari, 2001). Generally, a well-executed realist study 'involves a reconceptualization of the subject and how it works' (Ackroyd, 2009, 537). Thus, a realist action research study should be able to come up with a novel interpretation of causal sequences that the program includes, and then involve the participants to reflect and act based on that knowledge. As with other types of research, action research can be explicitly or implicitly realist in nature. A good way of assessing this is, unsurprisingly, the implicit or explicit focus on latent abstract social mechanisms. Since mechanisms are the focal point of realist research, any 'action' (discursive, organisational, material or other) needs to take issue with them (e.g. see Chapters 3 and 4 on youth velonomy). Put simply, the reflective phase of the action-reflection cycle seeks to identify oppressive mechanisms and empowering mechanisms and subsequent actions seek to remove or 'soften' the oppressive mechanisms and trigger empowering mechanisms (Houston, 2010).

In the realist tradition, action research might appear as a small, distinct branch compared to evaluation and policy analysis, but as put by Westrorp et al. (2016, 361), since '*Realistic Evaluation* (Pawson and Tilley, 1997) was published, it has been acknowledged that realist approaches could be used in the development of policies and programs and not just in their evaluation'. Thus, on the level of social scientific analysis realistic evaluation and action research are the same with one another (or perhaps 'mirror images'). However, while realistic evaluation concerns the capability of given program to actualise change in practices, realistic action research could be considered to aim to simultaneously changing the program itself. To draw up the continuum from the beginning of this chapter: realism makes it ontologically and epistemologically viable to evaluate social programmes, projects, policies and initiatives, their alleged means and ends. Evaluation, in turn, enables research-based policy

critique, and provides the grounds for rethinking and -designing the programmes at hand through action research.

However, while the science theoretical underpinnings remain the same, the move from 'passive' observation to active participation changes the research process in important ways and action research has properties that align with realist principles in distinct ways. First, the process-oriented nature of realist research is compatible with the process-oriented nature of action research meaning that the formulation of ideas and their empirical testing (Emmel, 2021) can become a *practical* exercise in addition to a theoretical one. In other words, action research provides drastically different means to mobilise the generative mechanisms and test how they react when new elements are introduced. Moreover, this allows for the research subjects – people, communities and organisations creating the programmes and being subject to them – to become participants co-researching the issues at hand and co-designing appropriate interventions, which evidently again impacts how they given meaning to the projects and programs and what they learn from them. Adding such a deliberate reflective element[29] means that action research can (in the best case) instigate radically open deliberation on *why* programs and projects are actually not, or only partly, conductive of the original ideas they stemmed from: why certain social problems prevail despite intervention and why some policies and programs remain ineffective. Put another way, action research can open up discursive and social spaces for new kinds of agency and deliberation (Wicks & Reason, 2009). The aim is that people start doing things differently and actively reflect on it, which can make the underlying generative mechanisms to work in unexpected ways and provide knowledge on what kinds of mechanisms transformations are based on. Hence, based on realist philosophy, it is not an overstatement to argue that action research can produce knowledge about generative mechanisms that *cannot be produced* through 'passive' research designs.

Operationalisation of the conceptual framework into action research
In sum, a key aim of this study is to show that action research is a valid (and disruptive) methodology to the study of the politics of mobility and transitions because of the realist distinction *between the existence of causal powers and their exercise*. Generative causality entails that mechanisms interact with each other, change each other and are dependent on the context (i.e. we live in a complex open system) and we cannot know what kind of change is possible if we don't use theory to (re)direct our empirical observations and, as in action research, experiment new things in practice. The point is that, for realists, reality is necessarily malleable. Despite hegemonic structures, change is possible and action research attempts to test the conditions of possibility

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29   This is not to say that appreciating actors own meanings and incorporating them into research would not be important in all realist research.

for different realities. Moreover, my research also highlights that these processes don't need to limit to organisations, communities and networks of actors that interact and collaborate already in the business-as-usual. Action research allows for colliding different viewpoints (rationalities and representations) that different groups possess, test the different 'truths' that they are based on and reconcile different ways of knowing[30].

The exact research designs and constellations of actors are detailed in the individual chapters, but what is being said above has also important implications for the use of theoretical concepts, that is, the operationalisation of the conceptual framework of the study. In Figure 5 the key concepts are depicted in dialogue with realist concepts and operationalised into a realistic action research[31]. The generative mechanisms that shape the outcomes of youth cycling initiatives (the prefiguration of youth velonomy and mobility commoning) are *actualised* in the construal of representations and construction of rationalities (Sayer, 2004). These two – rationalities as material, institutional and organisational forms, and representations of mobility and mobile subjectivities as their logical (or illogical) discursive counterparts – are intertwined and reliant on one another (Fairclough, 2003; 2013) in reproducing or changing the structures around everyday mobility (Newman, 2020). In other words, the realist action research cycle is based on the realist notion of structuration (Archer, 1995; 2000), where all social activity necessarily reproduces or transforms the prevailing structures and discourses of given communities, organisations and networks. People participating in action research processes are considered agentic, meaning-creating beings who 'are able to change themselves, their social relations, and their environments' (Sayer, 2000, 97).

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30   To avoid being idealistic, I would argue that this is a balancing act: actors must be sufficiently different but not too different for them to be able recognise each other's situations and viewpoints.

31   This is not to say that we should demarcate between, say, 'realist concepts' and 'postmodernist concepts'. Individual studies and concepts developed in them can be implicitly realist and even concepts stemming from explicitly anti-realist accounts can be recast in realist from (Sayer, 2004, 17).
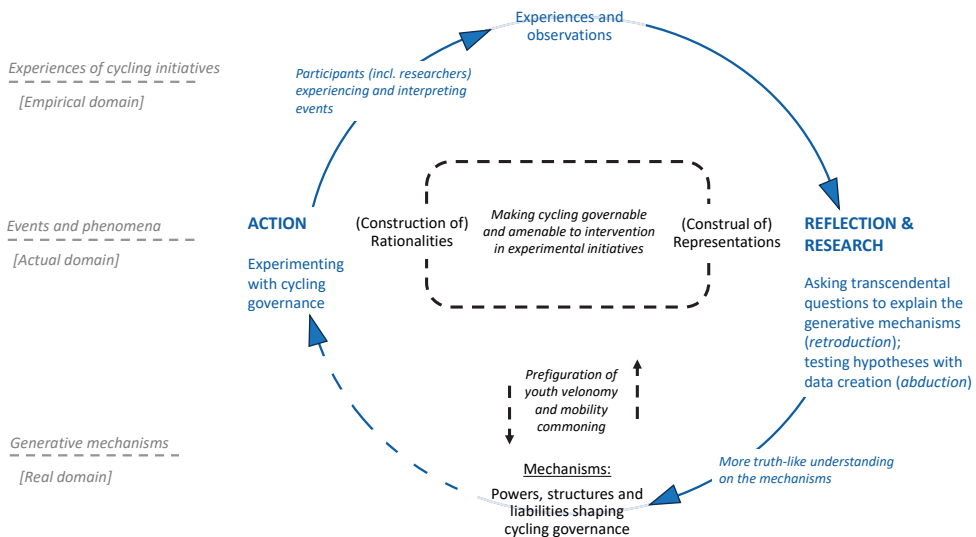
Figure 5 Operationalisation of the conceptual framework (author).

Conclusions: action research as a mobile method

As outlined in the above, realist action research takes advantage of the whole repertoire of applications that realism has to offer – it evaluates, criticises and sets goals to change mechanisms and instigates or supports concrete actions. As this is done in multiple iterative cycles, theoretical ideas become more robust and truth-like and respective actions more efficient. I do not wish to portray it as the climax of realist applications (indeed, more elements, phases and interactions often can make processes overly complicated) and I do not advocate a strict demarcation between action research and any other realist approaches, but my point is that adding explicitly practical and emancipatory processes in research designs is in many ways supported by critical realist research principles (Houston, 2010; Westhorp, 2016). As such, realist action research is a very explicit case of 'enacting the social' in and through research, based on the notion that social realities are not merely described by methods but also created by them (Law & Urry, 2004). I argue that this approach has important parallels with some prominent features of mobility research, especially the work around mobile methods.

Like critical realists, many proponents of mobility research see that research methodologies should be based on critical understandings on what the phenomena subject of study are like. Mobilities, as objects or research, are ephemeral, fleeting, fluid and multiple, assembled in peoples' spatial, cultural, political, economic, social and per-

sonal contexts, and emerge relationally in open systems (Urry, 2007). This relational ontology has led to the questioning of any compelling normativity of methodological rules or guidelines in mobility studies. Rather the opposite, as the field has witnessed a surge of mobile methods, referring to flexible and adaptive tactics to study the specific phenomena that mobilities research is interested in (Büscher et al., 2020; 2011; Fincham et al., 2009; Urry, 2007, 30-42). Art-based methods, mobile interviewing, autoethnography, utopian methods and for example different follow-the-object approaches are all participating in the field of inquiry in ways that challenge the traditional dichotomy between the subjects and objects of research (ibid.). And yet, despite complexity and relationality of mobilities, they are very much *real*, and as put by Sheller, (2014) their inquiry should follow a realist relational ontology – mobile methods are effectively (re)producing the empirical field just as suggested by realist social theory (Archer, 1995).

In other words, mobile methods and realist approaches have created means to complicate the traditional relationship between research and its objects *in similar ways*. But the fact that the objects of mobility studies tend to be moving is not the sole reason for the mobile methods movement. Another, and the more relevant from the perspective of action research, is that mobility studies have since their inception, in different ways, aimed to combine critical analysis of phenomena with the imagination of pathways towards alternative realities, i.e. to come up with workable solutions to social problems that is has discovered (Sheller, 2018). They have a *normative* dimension, and this kind of normativity is also firmly built in the tradition of critical realism. For Bhaskar (2009) his project meant creating a well-defined metatheory for social and natural sciences but also a means for human emancipation and radical societal transformation. Research findings on what the social world is like are not so much 'conclusions' than starting points of change, and studies should be able to produce tangible social critiques to sort out pathways to a better world by for example engaging with social movements (Bhaskar, 2009; Price, 2019).

Understanding how mobilities are assembled relationally, how these assemblages are influenced by power relations and how they make people *really* suffer or flourish, necessarily nudges the studies to make normative conclusions. For instance, it is safe to say that a massive majority of all cycling research has a normative agenda of understanding how to best promote cycling, and in consequence, counter the societal processes contributing to the environmentally and socially unviable car-system. Yet, as discussed Chapter 1, this is different from whether cycling studies are explicitly critical towards the political relations the injustices stem from and actually able to move beyond mobility rationalities created under the hegemony of automobility (Cox, 2023). For instance, if studies are based on a latent notion of utility-maximising mobile

subjectivities making unconstrained and rational 'choices' on their everyday movement, it is unclear how they could create social critique that emancipates marginalised mobile subjects and modes of mobility. These approaches are unable to explain the preconditions of change in broader political terms and contingently, remain antithetical respective to realist research (Buch-Hansen & Nielsen, 2020).

Building rational grounds for normative claims is where mobility studies, as well as critical realism, have come to question the often-held binary between fact and value (e.g. Freudendal-Pedersen, 2014; Freudendal-Pedersen et al., 2010; Sayer, 2011). Indeed, it is difficult to imagine why critical social research should exist if it was not to create explicit advice on where we would be wise to go if we have certain values and interests (regarding mobility as communities, cities and societies). To give a concrete example, widely used notions such as 'development' or 'domination' are simultaneously descriptive and normative: they entail factual descriptions of circumstances and whether they are good or bad in relation to human needs (Sayer, 2004, 14). In other words, all 'rational' accounts have moral connotation and fact and value are necessarily intertwined. Positive (descriptive) thinking must be coupled with normative thinking to make explicit accounts on what is it *exactly* that we oppose or favour, and why and with what implications (Sayer, 2000; 2011). The point is that the connections between outstated values and factual lines of action are more or less 'true', which is why critical research needs to account for both of them. Once we acknowledge this, realists advocate the explanatory critique of false ideas and institutions behind them based on the notion that it is better to make value-judgements based on social scientific knowledge (despite its fallibility) rather than have no grounding for values whatsoever.

The implications of this position for practical research are clear: 'if the social scientist discovers mechanisms that led to harmful effects –as, say, in the operation of the neoliberal economy – then there is an obligation, ipso facto, to expose those mechanisms for what they are' (Houston, 2010, 76). Importantly, this applies similarly to the outside as well as inside the research settings: if research accounts deviate from those of study participants, policymakers or other related entities and people, the duty of the researcher is to bring up these controversies. False understandings, actions based on them and conditions supporting them ought to be changed but only when there is compelling evidence and explanation why certain circumstances are harmful (Sayer, 2000, 58-62). It cannot be that claims such as 'it is bad that children and young people in place x have inadequate social support for autonomous mobility' would be

taken for granted as a starting point of study – studies need to explain *why* something is good or bad[32].

In conclusion, my argument is that realism is a powerful means to clarify the notion of action research in transformative research on the governance and transformation of mobilities. By abandoning the false connection between 'objectivity' and value neutrality, realist mobility research can assume a degree of normativity based on rational grounds to privilege certain discourses and practices, representations and rationalities, over others. This allows studies to overcome the defeatist postmodernist view that is at worst unable to tell justice form oppression and illbeing from wellbeing (Sayer, 1993; Olsson & Sayer, 2009), and to apply participatory and action-oriented approaches that are not doomed to the tyranny of participation and that can move beyond the limitations of transdisciplinary pragmatist research (Emmel, 2021). In my research this means moving beyond mobility rationalities and representations that prevent the emergence of children and young people's velonomy, velomobile commons and mobility justice understood as access to urban cycling. The contributions of contemporary urban mobility to climate breakdown, lack of physical activity and wellbeing are real problems. Solutions to them are equally real, but hidden behind and below directly observable events, phenomena and people's experiences of those phenomena. Here my realist action research is an attempt to mobilise representations and rationalities that can tease them out, prefigure change and perhaps at best provide new understanding on how similar mechanisms of change can be triggered across contexts.

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32   Here, I would argue that the mainstream of research on children and young people's 'active transport' has highly limited notion of what is good or bad in its objects of research – that prevalent rationalities of youth mobility are unconscious why cycling matters to children, young people and their families, and respectively, what kinds of mechanisms should be triggered to promote it.

Chapter 3

Prefigurative politics in action research for just cycling futures[33]

Abstract

The paper proposes that action research, not as a predefined set of methods but rather as a mode of research, should be considered a key asset in creating transformative knowledge on just cycling futures. I explain, firstly, why action-oriented, experimental, and participatory research should deploy the concept of prefigurative politics – the performing of not-yet cycling futures here and now – as a theoretical, methodological and practical resource to counter hegemonic, oppressive, essentialist and authoritarian mobility rationalities. Second, I argue why prefigurative action research is most applicable when involving diverse actors across cycling governance networks into a democratic social learning process. These arguments are developed by synthesising literatures from social movement studies and mobility and transport justice, and by providing examples of four social cycling innovations among a population often marginalised from transport policy and planning – children and young people. In conclusion the paper proposes a model for conducting prefigurative action research on cycling.

Introduction

The future role of cycling in urban mobility is tracked through myriad theoretical-methodological frameworks. For example, scenario modelling (Hickman et al., 2012), utopianism (Fleming, 2017; Popan, 2019) and critical analyses of 'smartification' (Nikolaeva et al., 2019) can all make important contributions. Importantly, imagining and crafting potential pathways, in policy, academia or otherwise, produce differing narratives regarding the desirability, plausibility and possibility of different futures (Banister & Hickman, 2013). Research is always performative by defining what kinds of questions we need to answer and which people's views are foregrounded. Neither cycling policy nor cycling research is never apolitical or innocent and these issues are reflected in two ways in current critical cycling scholarship.

First, imaginations of cycling futures are often forged under the shadow of capitalist and neoliberal urbanism and the system of automobility, meaning that they fail to break away from hegemonic social and political imaginaries and path-dependencies that the current regime has created to protect itself (Cox, 2023; Spinney, 2020). Studies seeking to explain 'what works' for cycling advocacy are often driven by 'behaviour change' schemes and 'interventions' for different populations, the effectiveness of which is often modest at best (e.g. Doğru et al., 2021). This body of work, despite its merits, analyses the effectiveness of various interventions without contextualising them in the wider socio-political landscape. If the focus of modal shift is on behaviour change and measuring the effectiveness of cycling lessons, awareness raising campaigns, incremental infrastructural changes and other individual initiatives, it neglects the power-laden governance frameworks, discourses and experiences that shape them in the first place (Cox, 2023). Incremental promotion of cycling on 'some (privileged) journeys' or 'for some (privileged) people' only augments the current techno-political social orders, without reframing the problem in political terms.

Second, cycling advocacy often fails to create socio-economically just mobilities, as explained by a large body of research on the social, cultural and political conditions of cycling. These literatures discuss explain marginalisation in terms of what kinds of subjectivities are sidelined through prevalent cycling policy across age, gender, ethnicity, class and other social markers. Terminologies like 'unequal cyclescapes' (Stehlin, 2019), 'bike lanes as white lanes' (Hoffman, 2016) and cycling as 'a mobility fix' (Spinney, 2018) all draw attention to how cycling policy, governance, planning and advocacy are failing to challenge prevalent socio-spatial inequalities (also Lam, 2018; Psarikidou, 2020). Cycling promotion risks advocating 'totalising tendencies which obscure social and cultural difference, ignore the embodied and affective dimensions

of transport practices and fail in part to apprehend the heterogeneity of environmental responsibility' (Cupples & Ridley, 2008, 254).

As 'tinkering' withing the marginal scope that is allocated to radically different futures in the hegemonic socio-political landscape is not enough, frameworks of more transformative (rather than reformist) mobility research have started to emerge, paying close attention to social justice (Karner et al., 2020; 2023; Sheller, 2018; Verlighieri & Schwanen, 2020). The lesson from these literatures is that research and policy need to account for more pluriversal definitions on what mobility is for and how it is performed, if they are to live up to their sustainable and egalitarian promises as a part of the 'just transition' discourse. In other words, velomobility should not be considered a universal solution, but be able to take diverse forms to avoid reproducing mobility injustices. A key condition of possibility for this plurality is that the new forms of autonomous human-scaled mobilities are grounded in self-reliance and autonomy, and actively dismantling existing and prospective path dependencies that serve to interlock velomobility with hegemonic principles as speed fetishism and capital accumulation (Cass & Manderscheid, 2018). More practically, this means turning from solutionist and technocratic research and policy to creative and value-driven methodologies that allow for marginalised and oppressed bike rationalities and local knowledges to emerge.

Mobilities research has been always concerned on the role of research in driving socially just transformation, especially by accumulating a wealth of insights on 'mobile methods' (Sheller, 2014). However, the critical transformative research agenda begs the question of how can individual research projects, confined in current realities, study the social change towards desired futures, especially as desired here encompasses a range of embodied, discursive, shared and experiential qualities of cycling conductive of intersectional, processual, context sensitive and even extemporaneous mobility justice (Nixon & Schwanen, 2019; Sheller, 2018)? Can we suppose that research participants, whoever they are, are even able to express informed views on 'the politics of what is not but what could be' (Cox, 2023, 282)? How can cycling research, together with policymakers, planners, activists, advocates and local communities start building 'the new in the shell of the old' (Ince, 2012)?

This paper proposes the theoretical-methodological operationalisation of prefigurative politics in action-oriented cycling research to address these concerns and explain why (realist) action research is an appropriate way to study just cycling transformations.

Operationalising prefiguration for cycling research

The core ideas of prefigurative politics have a long history in activism and anarchism, even though the term as such was not always used (Raekstad & Gradin, 2020). For example, Gramsci (1971, cited in Davoudi, 2023) was interested in the capabilities of the civil society to build alternative social orders in the present, without explicitly referring to prefiguration. The classic definition by Boggs (1977, 100) is still widely used: '[t]he embodiment, within the ongoing political practice of a movement, of those forms of social relations, decision-making, culture and human experience that are the ultimate goal'. While the basic idea has largely remained unchanged, recent social movement research has tremendously advanced the applicability of the concept (Cooper, 2020; Ince, 2012; Ishkanian & Peña Saavedra, 2019; Jeffrey and Dyson, 2021; Maeckelbergh, 2011; Swain, 2019; Yates, 2015; 2021). Building on this work, prefigurative politics has recently also become the interest of planning, transformation, and urban scholarship (Davoudi, 2023; Thorpe, 2023; Törnberg, 2021). From the inclusive cycling perspective prefiguration is promising for action and research as it 'nurtures a basic sensibility that, whatever the nature of the present, situations can change, and even the most marginalised might participate in effecting that transformation'. (Jeffrey & Dyson, 2021, 653). For the purposes of this paper, I focus on three interrelated 'moments' of prefigurative politics as outlined by Jeffrey and Dyson (ibid.): improvisation, institutionalisation and impact, and discuss them along relevant planning and mobility research.

Firstly, the notion of improvisation highlights prefigurative politics' focus on action alongside imagination (Jeffrey & Dyson, 2021; for broader use of the term see for example Müller & Trubina, 2020). Prefigurative action reworks and appropriates material and spatial relations and meanings ascribed to them in creative ways in order to queer or renegotiate established structures (Maeckelbergh, 2011; Swain, 2019; Thorpe, 2023). Yet, this is a process of trial and error, and improvisation must be coupled with continuous scrutinization what actions are conductive of the movement's aims.

Some actors and movements embrace highly proleptical forms of improvisation, meaning that individuals and collectives start acting 'as if' the new social relations and institutions were already a reality (Cooper, 2020). Prolepsis aims to challenge dominant notions about the 'impossibility' of alternatives and reshape people's sense of what is 'real'. For example, Thorpe (2023) describes the activism of so called 'transformation agencies' in the US, that appropriate official looking materials and spatial tactics to create DIY experiments. The point is that these groups create concrete actual experiences of 'as if' official bodies were already committed to ensuring safe, equitable

access to streets for everyone, making it uncomfortable for these entities to normalise the disastrous repercussions of excessive car use.

Crucially, improvisation sets prefiguration apart from anticipatory imaginaries and politics that are based on a notion that we need concrete future images to work towards (or away from) (Jeffrey & Dyson, 2021). Indeed, future imaginaries of cycling often posit, implicitly or explicitly, that change necessitates a concrete blueprint for the future: a utopia, a model or designing smart technological fixes. In contrast, prefiguration does not mean pre-defining a postponed future but performing the possibilities of the not-yet (Swain, 2019). One of its central features is means-ends equivalence, which means that the organization of initiatives reflects their outspoken goals and demands to create a path towards radically different futures (Yates, 2015). For cycling advocacy, this could mean an active refusal of the system automobility or any other hegemonic regime with all the necessary social, cultural, political and economic relations they might demand (Cox, 2023). This way, emphasis on the process instead of the predefined outcomes demarcates prefiguration from utopianism and other future-oriented planning and design conceptualisations. It dilutes the preoccupation of planning to generate long term strategies to guide short term actions, that most often reproduces the status quo by projecting the present into the future (Davoudi, 2023).

I will argue through my case examples that this inherent openness and fluidness of prefigurative practice is a key asset in planning and enacting cycling futures that are attentive to the needs of marginalised and vulnerable groups and communities. Explorative improvisation nurtures a sensitivity towards the intersectional and locally contingent mobility injustices that are processual, emergent and even extemporaneous in nature (Nixon & Schwanen, 2019; Sheller, 2018). Essentialist and universalising cycling imaginaries are challenged by new experiences and shared meanings that might prove far more efficient triggers of change than anything that researchers or study participants might come to think when designing their studies (see Silonsaari et al., 2022). Indeed, despite its seemingly disorganised demeanour, studies have emphasised the strategic importance of improvised actions: 'the goal of pursuing "(an)other world(s)" in an open and explicitly not predetermined way requires practice over time, and that is what makes prefiguration the most strategic approach' (Maeckelbergh, 2011, 3). Hence, any sharp separation between strategy and action loses its meaning in prefigurative action because prefiguration itself 'is an effective strategy that is fluid in nature' (Dinerstein 2015, 17).

Second, however, prefigurative action does not occur in a vacuum outside of existing power structures and hegemonic practices, and it needs to develop some sort of

institutional forms. Because the political, social, material and spatial environment is often hostile towards counterhegemonic practices, prefigurative action needs safe spaces to nurture and empower itself. Thus, successful prefigurative politics is usually somehow institutionalised within organisations, networks, practices, discourses or structures of power (Jeffrey & Dyson, 2021). Social movement studies have explained in length how squatted houses, countercultural 'scenes' and other spatial, social and cultural spaces can nurture prefigurative actions. Yet, when actions start to assume institutional forms, this always brings in the internal politics of these 'safe' or 'free' spaces. Here, Ishkanian & Peña Saavedra (2019) have coined the term intersectional prefiguration to address how structural inequalities persist and are accounted for in prefigurative institutions.

Very similar strengths and weaknesses of 'institutionalisation' can be read from transitions and mobilities research. Törnberg (2021) has pointed to the similarity of these 'free spaces' with the concept of niches, as outlined in socio-technical transitions studies (Geels, 2012). They serve to protect prefigurative actions from the repression, top-down adjustment or co-option of the hegemonic regime – in the case of cycling for example the automobilist cultures and planning principles. However, as implied in the substantial body of critical cycling research cited above, cycling niches need to actively tackle their own internal inequalities and relations of exclusion to promote intersectional prefiguration (Ishkanian & Peña Saavedra, 2019). Sheller (2018) for example uses The Untokening and Slow roll movements to explain why mobility justice necessitates intersectional cycling advocacy.

Thirdly, there is the 'moment' of impact, which of course encompasses the sense of the whole concept of prefiguration for transformative research (Jeffrey & Dyson, 2021). Prefiguration has faced a lot of criticism for being unthreatening to the dominant social and political orders for example when the institutionalisation leads to social closures or introverted 'fetishising' (Argüelles et al., 2017). In other words the actors might get so excited about the spaces they create, that the wider systemic change is left on the background. On the other hand, prefiguration has also been considered susceptible to co-option when even institutionalised forms cannot protect it from hegemonic powers and actors (Kulick, 2014). Still, despite these weaknesses, prefigurative movements have a solid track record of creating sustainable impact by scaling up and spreading initiatives; developing transferable skills and assets for the participants; triggering far reaching attitudinal changes beyond the activist groups; and creating a shared sense of association, purpose and hope for change (Jeffrey & Dyson, 2021; Raekstad & Gradin, 2020).

For the purposes of this paper a key consideration from the impact perspective is how actual experiments are nurtured into being among diverse actors in action research processes. All types of counterhegemonic experimentation are evidently central to prefigurative politics and street experiments, tactical or DIY urbanism and other types of tentative changes in social, spatial and material relations have become celebrated urban governance methods to create change (Evans, 2016). Yet, experimentation can be conducted in myriad ways and the improvisation and institutionalisation it entails are, as brought up above, subject to external and internal politics.

Savini and Bertolini (2019) have critically discussed experiments as 'politics of the niches'. They distinct three political acts in the creation of experiments – definition, direction and resource mobilisation – which regulate how alternative practices come into being and develop, and eventually die out, remain in the margins, become coopted, or change institutional orders. Especially if experiments are coordinated in prefigurative institutions or networks marred by undemocratic power positions (contrary to the principles of intersectional prefiguration), these spaces may not protect the radical ideas but do just the opposite. Savini and Bertolini's account implies the interplay of improvisation and institutionalisation by thinking experimentation not from a depolitised 'managerial' or 'innovation' viewpoint, but rather as political recognition of social innovation, the first being a 'way to nurture or even create a niche for a particular predefined goal. The second instead leads to questioning the conditions (who, what and why) that determine which niches are recognized and which are not, which ones are nurtured, or which ones are instead left to die.'

Next, I explain how the three moments of prefiguration should supplement and inform action-oriented and experimental cycling research.

Action research and learning

Generally, action research refers to interactive, counterhegemonic, and process-oriented methods that seek simultaneously to study and promote change in relevant organizations, communities and networks (Reason & Bradbury, 2001). The nuances of action research designs remain outside of the scope of this paper but, it is important to point that my work builds on realist action research, stemming from the philosophical branch of critical realism (Houston, 2010; Westhorp et al., 2016). Such realist approaches do not suggest rigid rules for methods but direct the logic of inference, especially the use of theory (such as prefigurative politics in this paper) to understand underlying social processes and tendencies that cannot be directly observed. In their seminal work Pawson and Tilley (1997) have explained in length how and why realist

approaches seek to provide an alternative to the randomised control trial and other similar experimental principles assuming closed laboratory-like system and straight forward relationships between dependent and independent variables (often adopted by cycling research focusing on 'behaviour change' and 'interventions' discussed in the introduction).

Perhaps the most explicit connection between prefiguration and action research is the shared notion that transformations are fundamentally about 'experimentation, learning, and doing something that has never been done before and constant scrutinization of what is being done' (Bradbury et al., 2019, 8) – in other words iterative work along more or less improvised action and deliberate reflection. This type of social learning is often achieved through experimenting with so called social innovations, meaning new ways of acting and organising that challenge existing social structures hegemonic orders and promote social justice by reconciling different ways of knowing and supporting their translation in new concrete practices (Bartels, 2023; Moulaert et al., 2013). For the prefiguration of inclusive velomobile futures, I want to highlight two crucial features of such learning in action research processes.

Firstly, these processes may concern very different organisational entities and it can operate at any societal, political or administrative level. However, to look beyond 'the elite- and expert-dependent paths to transformation' and to understand 'how might there be integrated social and environmental pathways broadly engaging and empowering people' (Bradbury et al., 2019, 5), I argue that impactful cycling action research processes should bring together diverse actors from across policymaking, planning, design, activism and local communities as emphasised in mobility and transport justice literatures (Karner, 2020; Sheller, 2018). For example, Davoudi (2023) explains how prefigurative planning 'can draw inspiration from and build on these civic energies and people's creative impulses which, as Lefebvre insisted, make up the urban life' (ibid. 2285). Crucially, action research as creation of horizontal, intersectional, safe and 'free' spaces sheltered from the dominant, essentialist and universalising narratives of cycling can allow for more democratic negotiation of the politics of the niches through iterative and improvised experimentation and reflection (Bertolini & Savini, 2019).

Second, learning in these types of settings is not a linear process but appreciates the learners relational, emotional, and embodied nature to develop their capacity for linking experience with sense making, reflection to action (Bartels, 2023; Bradbury et al., 2019). This sensitivity to pluralistic ways of knowing suggests that transformations 'cannot be achieved only by the instruments of the state and the market but it requires a new societal orientation and awareness by "ordinary people", providing the pos-

sibility for people to take part in the regulation and administration of the "common affairs"' (Hansen et al., 2016, xvi). Translated to cycling research this would mean incorporating the multiple ways how people experience our collective lifestyles and mobility patterns and how the governing of mobility intersects with everyday mobile lives (Doughty & Murray, 2016). In the action research processes this means continually monitoring how given experiments alter the target group's everyday experiences, which in turn should regulate what is considered meaningful action.

Change through novel interactions and practices and the contingent social learning is what makes action research meaningful as social activity and research practice. In the field of urban mobility, such spaces of learning can be vital for new ideas to emerge and platforms for future sustainable mobility (Freudendal-Pedersen et al., 2017). While social learning has myriad definitions and applications (Wals, 2007, Reed et al. (2010) have explained that such processes should always be able to demonstrate that change goes beyond the individuals and becomes situated within wider social units or communities and occurs through social interactions and processes between actors within a social network. To create a concrete analytical framework for prefigurative action research, I connect the three moments of prefiguration with three broadly defined aspects of social learning that Ballard (2005) has deemed crucial for change: awareness, agency and association.

Firstly, any learning driven change process concerns broadening the participants awareness on the phenomena at hand. This can concern general knowledge about the change agenda – what needs to change and how – or focus for example on the relevance of different actions and the structure of the issues (e.g. what are the meaningful actions to facilitate cycling for marginalised communities and groups). New awareness can also concern the urgency and the scale of change (e.g. what are the locally meaningful and context specific societal costs and repercussions of the injustices reproduced by current urban transport systems). Awareness also includes new understandings of participants' own potential role in change, meaning their agency. Indeed, new awareness is unlikely to stimulate change unless agency against hegemonic structures is developed in parallel. This can encompass a vast range of issues but for example in critical cycling research it is acknowledged that people in different roles and life situations need to find those aspects of cycling that resonate with their situated and context specific goals (Cupples & Ridley, 2008). This often means that people need to acquire new skillsets and dispositions, appropriate new representations or discourses and become aware of the impact of their actions. These processes, in turn, are most influential when realised in association with others. Social leaning is very difficult to come by unless people recognise others that are struggling with similar issues and association can also introduce a variety of relevant perspectives

to the issues at hand. Association, in turn, can again reinforce a sense of agency, by offering validating feedback on actions.

The exact operation of these broadly defined aspects varies between different research settings, but the key is that any change initiative is likely to be ineffective if only some of them are addressed. For instance, association and awareness without agency is likely to lead to little more than a talking shop; awareness and agency without association will likely lead to change agents becoming overburden and ignored; and association and agency without awareness might produce actions that focus on totally trivial issues (Ballard, 2005). Next, I provide concrete examples of how learning along these lines is intertwined with prefigurative politics in action research.

Experimenting with social cycling innovations

Empirically, I have observed and facilitated prefiguration and learning among three groups: local cycling advocates and civic organisations; planners, policymakers, civil servants and other public authorities; and local communities whose cycling practices the projects have tried to facilitate, in this case children, young people and families. The two cases that provide the empirical examples for this paper are only briefly outlined as they are described elsewhere in detail (Silonsaari et al., 2022; Silonsaari et al., 2023; Silonsaari, forthcoming). They exemplify how action research processes can assume very different modalities, i.e., the differences between initiating and running experimental actions (Case study 1) and participating and supporting existing ones (Case study 2) (Ackroyd, 2009; Hansen et al., 2016). The studies were also conducted in very different socio-cultural and organisational contexts. The first study was focusing on a predefined group and specific journeys whereas the second study was wider in scope with a spatial focus.

Below, I use children and young people's accounts to reflect on four community-led initiatives: bike buses, DIY infrastructures, rideouts and bike kitchens. I combine the three moments of prefiguration with the three moments of social learning to explain how these initiatives succeeded or failed to incorporate young people's everyday experiences and instil learning among diverse actors.

Case study 1

The first study took place in the Finnish municipality of Jyväskylä during 2020-2021. While Finland is not a high cycling nation, children's autonomy of mobility by foot and bicycles is high (Goel et al., 2022; Shaw et al., 2015). Our research team brought together local cycling advocate NGOs, municipality representatives

and a local youth sports club community and created an experimental project. The main focus of the initiative was on children's journeys to organised activities that are notoriously car-dependent (Hjorthol & Fyhri, 2009; Wheeler & Green, 2019). The target community consisted of middle-class native Finnish households and majority of the participating children were boys. The core group of children taking part in the experiments consisted of 35 children aged 10-12 subject to five focus group interviews (see Silonsaari et al., 2022).

Bike buses

Bike bus (or bicibús) is an organised children's group ride, typically from home to school (bicibús.eu; Simón I Mas, 2023). It can be led by adults or children and just like a bus, it has a predefined itinerary and schedule. The 'stops' are meeting points for the participants to join the group. Any bike bus should be tailored for the needs of the communities in question, but the global concept has become a celebrated social in-novation to organise children's journeys and simultaneously question the urban order where children's right to the city is effectively suppressed (ibid.).

Bike bus was one of the experiments to promote children's cycling on their journeys to the sports club activities. Even though the concept was initially welcomed by children and parents, it quickly dissolved and metamorphosed into children's self-organised practices:

Jimi: It was nice to learn the route together at first, but it just took so much time to get organised and have everyone onboard. Its much better to organise by yourself. We would sometimes take a flight because it got boring. We could have taken a much better route with my friend but we were forced to participate in the bike bus.

Author: So how do you organise your journeys these days?

Jari: So basically, we have just agreed that we meet 30 minutes before our training session at a certain spot. And this would then mean that I would meet with Pietu about 5 minutes before that at his place.

Noah: Well yeah and then you have also always the choice of going by yourself. Depends on my feeling. Sometimes just listening to music or something is nicer than talking the whole journey.

Jari: You mean on those days when you don't want to listen to Jimi [everyone laughing]

Reflecting and acting on children's everyday experiences during the project was important to account for their **agency** as they were allowed to take over the bike bus initiative. The quote highlights how this agency allowed the emergence of a totally new social space and new forms of **association** as 'groups of cyclists'. These shared riding experiences also created newfound **awareness** among children and adults on what types of journeys are possible in children's everyday lives (see Silonsaari et al., 2023):

> *Aatos: First I thought that the journey is super long but then when we started doing it, I realised that it was not so far away and it was not at all heavy. And for me that is like 10 kilometres.*

This case exemplifies how **improvisation** can facilitate the evolution of a broadly defined social innovation into a locally appropriated learning process, necessitating continuous dialogue between children's everyday experiences and the actors managing the project. Following through with a predefined, rigid and systematic implementation would not have been deemed appropriate by the children. The organic form also enabled the children to seek local potentials for playful and explorative riding, complicating the hegemonic notions of what cycling is for and how it should be performed (see Silonsaari, et al., 2022; 2023).

Even though the bike bus as a strictly **institutionalised** form of organised collective riding practice dissolved, collective pedalling took different institutional forms in the community. It was manifested for example as stickers and t-shirts stating that the club was now 'a cycling community'. Yet in this particular setting arguably the most important aspect was the appropriation of children's autonomous mobility in the local parenting culture – i.e. the parent's collective recognition that allowing for children's autonomous cycling can be a form of good and responsible parenting (Silonsaari et al., 2023). Also the children were highly sensitive towards the meaning of the initiative for parents:

> *Frans: My parents have really liked me going by bike. It's quite heavy for them to chauffeur us back and forth and they have long working days.*

> *Jaakko: It just saves everyone's time. My parents like to take me by car sometimes but not constantly, they get so tired and uptight, and loose their nerves if something goes wrong.*

> *Noa: For us also, we are three siblings and everyone is doing a lot of activities, so I've been glad to be able to help mom out by taking care of myself.*

Chapter 3

These improvised paths and institutional forms leading to desired **impact** – a major change in the community travel patterns – would have been difficult to achieve without an open-ended prefigurative approach. It points how changing the 'politics of mobility' in such local communities demands shared experiences and spaces for deliberate free reflection. The change from car-chauffeuring to cycling in this case highlights how the care relations among children and adults are renegotiated when the community started acting proleptically 'as if' children cycling on highly car-dependent journeys was normal, leading to social learning.

DIY infrastructures

Another key experiment in case study 1 was a pop-up equipment storage that was set up at the sports venue where children's activities took place. What became known in the community as 'The Container' served to store the participants sports equipment so that they would not need to carry loads that were normally transported by car. We worked together with the municipality, the local sports venue and the club volunteers to repurpose a large transport container equipped with light and heating and to address the myriad administrative and practical problems that occurred on the way. While this highly unusual and **improvised** infrastructure tackled a very 'objective' challenge (children's inability to transport specialised sports equipment on a bike) it also served to nurture new 'feelings' among the children driving the change – affective ambiences **agency** and **association** in a free space for 'hanging out' (see Silonsaari et al., 2023):

> Jake: When we sort out our stuff together right after our session in The Container, there is that cool vibe and feeling. You got your pals around you and you can talk and make jokes and its like 'our place'. But that feeling is gone if you do all that at home by yourself.

> Petri: … but the only downside is that it smells terrible in there [everyone laughing].

The Container also shows, as explained by Thorpe (2023), how 'objective' nature of experiments can carry a crucial importance for their prefigurative **impact**. The meaning of 'The Container' as a self-made **institutional** emblem of the whole project was not underpinned by suggestive persuasion of children to cycle but an objective and 'impartial' object signalling 'as if' cycling on these car-dependent journeys was a normal practice. Importantly, the improvised and DIY nature of the project meant that a large group of participants – club officials, the venue and municipality representatives, local cycling NGOs, volunteers and children's parents – had the opportunity to participate, adding another layer of **association** and shared **agency** in the overall scheme. The Container showed how quickly change—in both infrastructure and its

governance—might be achieved through acting 'as if' non-car mobility was accounted for in everyday infrastructures that shape people's everyday lives. Subsequently, children, parents and the project participants found new **awareness** on the complexity (or simplicity) of issues regarding their detachment from the system of automobility.

Case study 2

The second study was conducted in Amsterdam in 2022-2023. The social initiatives of the municipal bicycle program often seek to work in partnership with local bike advocates and other relevant civic entities. I got involved in a range of co-created projects aiming to apply innovative and participatory cycling promotion methods in the multicultural and marginalised housing estate in Amsterdam Southeast, where cycling rates are significantly lower than in the rest of the city and where majority of children and young people are from non-white migrant backgrounds.

Here the initial driver of inquiry was the fact that young people's cycling is not equitably distributed in the city. Amsterdam is increasingly polarized as people with non-native backgrounds and lower-class positions are largely concentrated in the peripheries (Savini et al., 2016). The ethnic and class composition of neighborhoods appears to be more important than spatial characteristics in explaining cycling rates (Nello-Deakin & Harms 2019) and it also shapes parenting norms and children and young people's cultures of mobility, autonomy and play (Karsten 1998). The study was not focused on a predefined group of youths, but as a part of the research process I conducted 12 interviews among 16-18-year-old youths that were in different ways involved in the initiatives (see Silonsaari, forthcoming).

Rideouts

The 'wheelie bike phenomenon', most often labelled #bikelife is, not unlike the bike bus, a recent social cycling initiative (Maag, 2019). It is perhaps most vividly showcased on group 'rideouts' (sometimes involving more than two hundred riders in Amsterdam) where young riders take over the city streets doing wheelies and stunts. The 'wheelie kid crews' are known also for 'swerving' close to cars, objects and people with high speed, showing skilful control of their large-wheeled BMX style bikes. Since they often involve racialised, lower-class youths, Stehlin (2019) has argued that the rideout should be read as an implicitly political act questioning the unequal urban order where certain population are pushed to the city peripheries.

In case study 2, the Amsterdam cycling program was seeking ways to engage with the youths who organised different types of rideouts. The program made attempts to promote the movement through events, competitions and innovative forms of youth work. The city plays no role in organising the rideouts and the youths that I worked

with emphasised that all activities should be organised in a non-hierarchical manner, without formal organisation, allowing for **improvisation** and equal distribution of **agency**:

> Tom: In every city there is a few key riders who often organise the activities. Sort of leaders but we don't want to call ourselves leaders. To make the point that everyone is the same. But you need to be skilful because that's how the younger kids get interested and come to you to ask how you do it.

The participants highlighted that the seemingly chaotic **improvisation** in the organisation and performance of the rideouts allowed them to build strong **association** among peers 'inside' the movement. Riding together and constantly building new relations on the streets and in social media through #bikelife also nurtured new **awareness** of cycling as a means to build community:

> Jax: When I quit football and started riding, my friends were like oh, 'that's so boring, why would you do that'. But I've told them always that come with me one time and you will love it. Because they think it's just riding around Amsterdam, but it is not. It is more that you get new friends and stuff like that, so they don't understand the story of bikelife. And for me it's about bringing new young people in the community so there is a continuum when I quit.

Despite its efforts the Amsterdam cycling program was largely unable to tap onto these self-organised activities and turn them into formal cycling promotion projects. Thus, these rideouts are not 'experiments' in the sense that they would be organised in a consensus-seeking institutional space among predefined actors. But this politics of the niches is exactly what makes them interesting for critical research (Savini & Bertolini, 2019). In essence, they are one-day cycling experiments where predominantly racialised youths from the city peripheries act 'as if' the central areas of the city where accessible for their racialised bodies and deviant cycling practices. They appropriate the spaces of travel into playscapes, which conveys a strong political message and makes visible how the contemporary city streets are organised for optimal circulation rather than expression and play. The fact that official bodies are unable to find creative ways to support these types of self-organised activities (and rather try to undermine them as my interviewees referred to rideouts as 'illegal') means that prefigurative action must seek for other **institutional** forms: as in this case the social media narratives, established riding practices and materialities of the specialised wheelie bikes.

While mass riding is often a form of a deliberate demonstration with political claims and a direct attempt to influence the governments, my observations on the rideouts

challenge this notion (also, Stehlin, 2019). Here the **impact** of rideouts derives from questioning prevalent political relations of the existing urban order between modes of transport or groups of people without any explicit political agenda (Castañeda, 2020). These actions make visible the policy urge to frame pedalling as an explicitly 'commuter' or 'utility' activity, that prioritises economically 'productive' practices and marginalises playful or otherwise 'deviant' ones (Aldred, 2015; Spinney, 2020). Thus, rideouts exemplify how more pluriversal biking rationalities can promote the **agency**, **awareness** and **association** of marginalised cyclists if they manage to organise **improvised**, but to some degree **institutional** performances as #bikelife in Amsterdam evidently does. Yet, based on my findings this learning process that has served to forge the community have not reached the city's cycling program.

Bike kitchens

Communities aiming to prefigure circular, post-growth, communitarian or otherwise counter-hegemonic velomobility cultures and ecosystems have since long organised themselves around community bike workshops and collectives, often best known as bike kitchens. This open concept is multiplying across the globe and a body of cycling research is dedicated to their operations, ideologies and contexts, and also analysing their social and political relations that could prefigure radically different mobility systems (Abord de Chatillon, 2020; Hult & Bradley, 2017; Valentini & Butler, 2023; Zapata Campos et al., 2020). Often the key idea is to promote participant **agency** and autonomy, or velonomy (Abord de Chatillon, 2020), in car-dominated urban settings by building **awareness** on bicycle repair and **association** with others.

In case study 2 I conducted participant observation in a local bike kitchen that was a joint venture between the city, the local district government, a local NGO and local bike advocates and volunteers (see Silonsaari, forthcoming). This co-creation group also involved three young people, who explained why the bike kitchen concept was potential to tackle the everyday challenges of cycling among local youths. They explained that commercial bike shops were often too expensive, but purchasing second hand bikes and parts was deemed risky:

> *Joshua: I don't want to buy a bike from anyone [I don't know]. You can really get screwed over, even if you sort of know what you are buying, the parts are expensive and sometimes you don't know what to do if something breaks.*

In addition to this precarity, the three of them emphasised that stealing bikes and parts was a problem in the area, but they saw that a local bike kitchen could potentially counter such illicit practice:

Jamal: If I need something for a bike, like parts, I'm going to steal it, I'm not going to lie to you, I will steal it. And anyone can do it, it is so easy. And I think many kids are like that but of course many would not do it if they could get recycled bikes and parts and be confident that they work or can be fixed for free.

The implementation of the bike kitchen was very much **improvised**: the NGO was operating in an old school building, where a room was furnished as a bike repair space. However, despite the promising conceptualisation and fact that the initiative gained distinct **institutional** form as 'The Bike Kitchen', it was unable to nurture radically democratic decision making or even the principles of sharing, learning and association. Especially the youth focus was lost in the process and there was little room for **improvisation** in terms of how the space should operate – i.e. by 'just' fixing bikes or teaching youths how to do it and building a community around the physical space. As I analyse elsewhere in detail this 'free space' was largely co-opted by hegemonic performance-managerial rationalities (Silonsaari, forthcoming). Hence, while on the conceptual level bike kitchen is imagined as a free space where **agency**, **association** and **awareness** in the form of new skills and dispositions can prefigure radically different mobility systems, the **impact** was suppressed by the internal politics of the space and the learning process did not reach all actors involved.

Conclusions

According to Cox (2023, 276) '[i]n the context of cycling research, the academic as actor/agent in late capitalism is in a position not just to observe what velomobility looks like, but also to act and assist in determining its emergent forms'. This call for action and the transformative and inclusive research agenda of urban cycling demands guidelines for how to practically implement disruptive experiments and social innovations; determine and involve the relevant stakeholders and people; analyse different dimensions of social justice and, finally, direct the attention towards social mechanisms and phenomena that can trigger change. Action research provides a wide-spanning framework to accommodate these needs and promote change towards just cycling futures. A large body of methodological literature provides guidelines for action research and this applies also to the realist action research that is paper is based on (Houston, 2010; Westhorp et al., 2016). However, these literatures seldom discuss the theoretical and conceptual resources that such studies should mobilise. In the above I have argued that prefigurative politics should be considered a resource to understand change and learning processes and to explain why differing civic and governance actors succeed or fail to find a common ground for innovative cycling promotion.

While the empirical examples are not intended as exhaustive analyses of the implementation of social cycling innovations in specific contexts, they serve to depict the intertwined nature of prefiguration and social learning in experimentation and action research processes. Their successes and failures highlight that learning needs to take place on the level of the everyday life of the target communities but also on the level of the co-creative spaces and between diverse actors. They show what kinds of struggles prefigurative learning processes are likely to entail when applied to cycling and mobility research (see Cavé, 2023). To conclude, Figure 6 incorporates these insights with the cyclical (realist) action research process (Westhorp et al., 2016).
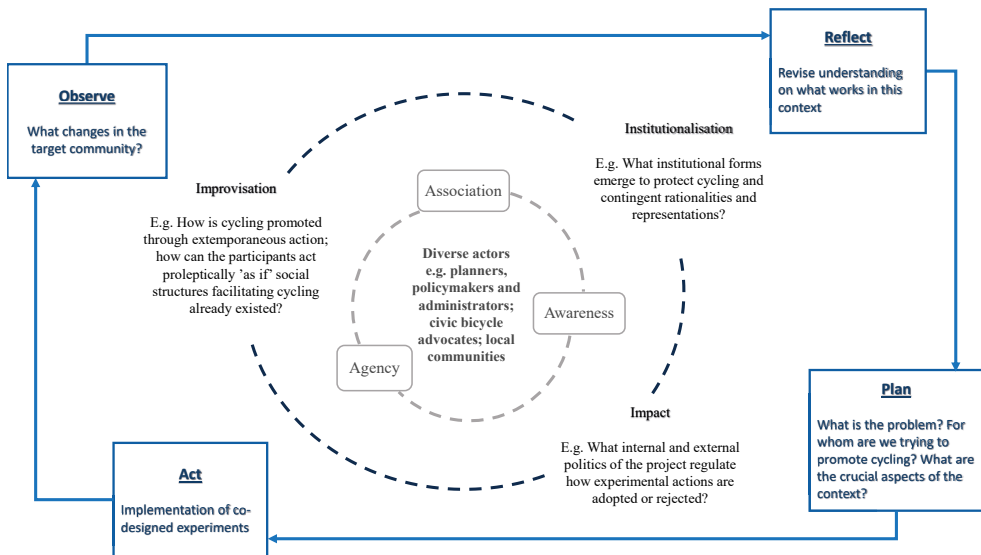
Figure 6. A model for (realist) action research process in prefigurative cycling studies (applied from Westhorp et al., 2016).

Chapter 4

Unravelling the rationalities of child-hood cycling promotion[34]

Abstract

Decrease of children's independent mobility (CIM) has worried academics, policy-makers, educators and other professionals for decades. Research and policy often emphasise that promoting children's physically active and independent transport modes as cycling is important to achieve better public health, solve environmental challenges and increase related economic benefits. Yet, cycling promotion is not a neutral process and all promotion efforts are derived from latent notions of 'cyclists' and 'cycling'. This paper discusses different rationalities of childhood cycling promotion and the representations of 'children' as independent 'cyclists' they entail. We argue that in order to efficiently promote cycling across contexts, we should better understand children's cycling experiences and meanings they ascribe to it and how their mobilities emergence in the flux of social, institutional and political relations. By applying action research to a local cycling promotion project in Finland we explore how instrumental, functional and alternative rationalities emerged and resulted in differing representations of children as cyclists. While all rationalities played a role in different stages of the project, the results highlight that alternative rationalities as children's autonomy, positive emotions and friendships were considered the most important drivers of new cycling practices among project participants. In conclusion we propose children's autonomous mobility as the most appropriate term to depict their cycling and other self-imposed (but relational) mobility practices.

1 Introduction

Cycling seems to have an exceptional meaning for childhood. For many people it is the first autonomous transport mode beyond walking, which provides an unforeseen liberty to discover the living surroundings, especially in countries and cities where children's autonomous mobility is commonplace (McDonald et al., 2021). Not much is known about how children perceive various features of cycling, but existing studies point to qualities that stand clearly apart from purely functional and instrumentally beneficial transport. For instance, playfulness, sensory pleasure, mobile sociality, 'coolness', freedom, exploration and escape are suggested to be some of the key meanings of childhood cycling (Bonham & Wilson, 2012, Handy & Lee, 2020, McIlvenny, 2015, Mikkelsen & Christensen, 2009).

By contrast, societal valuations of children's cycling and other human-powered mobility seem far clearer. Assessment and calculation of various benefits, especially in relation to health, is often emphasised in wide ranging literatures on children's independent mobility (CIM). Importantly, studies have pointed how CIM has steadily declined in the industrialized world for decades (Hillman, 1990, Kyttä et al., 2015, Shaw et al., 2015) as adult chauffeuring by car has claimed precedence in daily mobility patterns and public space (Karsten, 2005). As a range of benefits is expected from CIM, this decline has spurred policymakers, planners and academics' interest. The rationality – why and how we should study and promote cycling – is often derived from instrumental and functional agendas. Regarding the why, the worry on children's (as well as adults) lack of healthy physical activity and its economic repercussions dominate discussions (e.g. Marzi & Reimers, 2018, Schoeppe et al., 2013). Regarding the how, research and policy aim to facilitate cycling as efficient, safe and functional transport from A to B (see Aldred, 2015), which is apparent for example in that the journey to school is often segregated as the single most important mobility practice (as a counterpart to adults' commute) (Mitra, 2013).

Hence, there seems to be a discrepancy between how children perceive their independent cycling practices and how a large part of policy and research see it – if it is an intrinsically valuable part of everyday life with its affective and social qualities or more of a functional and instrumental practice. We argue that too much reliance on the instrumental and functional rationality advances a reductive understanding of 'children' as 'cyclists' and fails to account for their meanings and experiences of everyday mobility (Horton et al., 2014, McIlvenny, 2015, Mikkelsen & Christensen, 2009). Subsequently we are lacking an important knowledge base to inform planning, policy and cycling advocacy to promote childhood cycling.

Representations of children as a social group and cycling as a mobility practice are crucial, because mobility language is performative (te Brömmelstroet 2020). Cycling promotion is always derived from more or less explicit representations of 'cyclists' and 'cycling' (Osborne & Grant-Smith, 2017). These representations involve sets of valuations and shape cycling governmentalities that privilege certain subjectivities and practices over others (Cupples & Ridley, 2008, Spinney, 2020, Stehlin, 2014). Studies have scrutinized cycling advocacy, policy and planning processes, infrastructures and materialities as well as education, marketing and other 'soft' measures to find out 'how certain forms of subjectivity are nurtured into existence instead of others; in relation to which rationalities are certain subjectivities represented as more legitimate, normal and desirable while others are marginalised or excluded?' (Spinney, 2020, 38). In this regard Cupples and Ridley (2008, 254) have criticized 'totalising tendencies [of cycling promotion] which obscure social and cultural difference, ignore the embodied and affective dimensions of transport practices and fail in part to apprehend the heterogeneity of environmental responsibility'.

This paper analyses the rationalities of childhood cycling promotion and subsequent representations of children as cyclists in a cycling promotion project in Finland. It is part of a national research project where mobility research seeks enhanced societal relevance and impact through urban interventions (see Funding). Hence, our argument is not that it is wrong to see cycling and other independent mobilities as something that serves a range of societal benefits. Instead, we argue that rationalities that reduce children's cycling to something that is detached form their own meanings and undermine their agency, fail to account for the social mechanisms that create change (Pawson & Tilley, 1997). This kind of inability to produce transformative knowledge risks to result in policies that are at best ineffective and at worst create perverse effects. To better understand changes in cycling practices, research should enable people to imagine and experiment things that are not restricted by prevailing transport rationalities and imaginaries (Cox, 2019, 41-42). To this end, we used action research, co-research and experimentation to create a learning process among the project organisers that in turn made different rationalities and representations observable in the course of the project.

First, we review studies on childhood and mobilities to inform our research setup. Second, we describe the methodology, research process and data. Third, we describe how the rationalities of childhood cycling promotion formed and changed throughout the project. In conclusion, we discuss why research on children's mobility should shift the attention from independence towards interdependence and children's agency in the relational emergence of everyday mobilities (Mikkelsen & Christensen, 2009).

1.1 Making up cycling children?

Spinney (2020) has analysed how cycling has been used as a mode of neoliberal governmentality and how this has served to exclude children (among other groups deemed 'non-standard', 'non-productive' and 'non-efficient') from cycling. Cycling children are something apart from the effective and purposeful use of public space in the neoliberal city, and mobility spaces are not somewhere children belong (ibid. 64–75). Excluding 'childish' use of mobility spaces constructs children as 'incompetent adults', who would need to learn to appreciate cycling as functional utility transport. As at the same time research and policy proclaim the benefits of CIM, children and parents are left in an ambivalent situation. Cycling can be regarded as a biopolitical 'mobility fix', as it is sought to fix societal problems (as childhood health and transport emissions), but the responsibility is waived to the individual (ibid. 86–102).

This responsibilisation of individuals through cycling promotion especially regarding health benefits is part of a more global research attention towards childhood bio-politics, governmentality and politicization of children's everyday lives (Kraftl, 2015). For our study they offer a starting point for analysing how the instrumental and functional rationalities of cycling entail implicit constructions of children, especially regarding their own capability to act in and make sense of the world. Pre-emptive and anticipatory policy addressing children's health issues (and cycling as a response to them) risks reducing children's bodies to biological matter that universally determines their future health as childhood sets the individual on a locked in trajectory (Evans, 2010, Evans & Colls, 2011). The child body is not a site of experience, agency and citizenship, but something that should be managed to contribute to collective future benefit (Mayall 2006). Similar 'futurity' can be observed regarding environmental issues (and cycling as a response to them) – future generations are the ones to bear the consequences of present-day adults' emissions, but this policy discourse allows the oversight of children's present-day agency (Evans & Honeyford, 2012). Katz, 2008, Katz, 2018 has discussed this dynamic and analysed how childhood policy and child-drearing practice reflect the socio-political importance of childhood in managing the ontological insecurity caused by political, economic and environmental futures. The neoliberal logic positions children as investments for the future, which 'are realised socially through some inchoate sense or fantasy wish-dream that they actually will 'save the world' or at least save us from ourselves and the consequences of our actions or inactions' (Katz, 2008, 12). Yet, their own ability to make sense of these issues in their lives and realise any futures in their present lived realities is often neglected (Evans, 2010, Evans and Honeyford, 2012, Mayall, 2006). This notion of children only as future adults and incomplete 'becomings' stands at odds with international political processes (e.g. UN Convention on the Rights of the Child) and research in childhood studies, that have established children as capable of making sense of their

lives and benefitting from participation along provision and protection (Holloway & Valentine, 2000, Skelton, 2007).

Regarding childhood mobilities, studies show that children are active agents in their emergence together with peers, adults and various institutions (McDonald et al., 2021). Peer relations shape children's walking, cycling and other mobilities in ways that question the notion of 'mobility as transport', because sociality, play and connected emotion often overrule the functional meanings (Horton et al., 2014, McIlvenny, 2015, Mikkelsen & Christensen, 2009). Co-mobility with parents creates mobilities of care (Ravensbergen et al., 2020, Waitt & Harada, 2016), but parents also negotiate, mediate, support or suppress children's mobilities without being physically present (Barker, 2003, Barker, 2011). These negotiations are greatly shaped by perceived safety issues and moral obligations about 'good' parenting and 'good' childhood in the car dominated transport system (Boterman, 2020, McLaren & Parusel, 2012, Murray, 2008, Petrova, 2021).

In addition, various institutions and organisations also shape children's mobilities (e.g Holloway & Pimlott-Wilson (2014) refer to the 'institutionalisation' of children's geographies). Here, one of the most prominent factors is children's organised activities. During the last few decades, sports clubs, art classes and other public and private after school activities have become a critical factor in moulding societal and parenting ideals about the appropriate socio-spatial organization of children's lives (Holloway & Pimlott-Wilson, 2014, Lareau, 2011, Wheeler & Green, 2019, Witten et al., 2013). This is explicitly linked to the increase of adult chauffeuring and decrease of CIM (Hjorthol & Fyhri, 2009, Lareau & Weininger, 2008, Wheeler & Green, 2019). Simultaneously children have become considered as 'incompetent' users of public space, which is apparent in moral positions about parenting (Valentine, 1996, Valentine, 1997) as well as in the production cycling infrastructures (Spinney 2020, 64). This shift of childhood from public space to institutional spaces is a key insight for the relational understanding of children's mobilities. For instance, already two decades ago Karsten (2002) observed the simultaneous exclusion of children from public urban spaces and increased provision of specialized, institutional spaces (e.g. outdoor play spaces, leisure centres and caring institutions) in Amsterdam, a globally leading cycling city.

This relational understanding of childhood mobilities blurs the line between independent and interdependent mobilities, making the whole dichotomy somewhat useless. Importantly, children's own agency in the emergence of their mobilities is not manifested through 'independence', but through negotiation in the flux of social relations (Mikkelsen & Christensen 2009). Turning the attention away from the taken-

for-granted positive notion of CIM and the instrumental and functional rationalities towards the processes where children's mobilities are negotiated (and acknowledging children's active role in these negotiations) can point out the deficiencies of current rationalities and facilitate the emergence of new ones. This means challenging the latent representations of children and cycling and analysing the two together to grasp how childhood and mobility 'recursively produce one another' (Barker et al., 2009, 5).

2 Methodology

To study rationalities of childhood cycling promotion, we took part in a project embedded in national and local sustainable mobility policy processes in Finland (see section 2.2). Through the case example we point how the socio-political reality played out at the end of the policy process, how different rationalities emerged and enmeshed and how childhood mobilities were renegotiated in the flux of social, institutional and political relations. The focus is on the discursive constitution of childhood cycling: what kind of framings, argumentation and knowledge are deemed legitimate and how that can change through practical experimentation, co-research with project participants and continued dialogue. Essentially, the paper suggests a methodology for studying how mobility policy and governance intersect with everyday mobile lives (Doughty & Murray, 2016).

2.1 Rationalities and action research

For these purposes the concept of rationality is derived from Jensen's (2011) notion of 'seeing mobility'. She combines Foucauldian-inspired governmentality framework with perspectives based on the affective experiences of spatialised mobility (see also Doughty & Murray 2016). Jensen argues that 'expanding our language for engaging with analyses of mobility develops our understanding of the political reality and the sociality in which mobility is enmeshed. Concurrently, the very establishment of ways of seeing, be it by policymakers, urban people or academics, is itself a productive exercise of power' (Jensen, 2011, 258).

The governmentality framework enables analysing transport policy and governance as discursive competition (and harmony), where rationalities are 'shaped by discourses, constituted through power and made visible in local practices' (Richardson 2001, 303). Governmentality consists of rationalities and practices imposing a 'conduct of conduct', which means that production of mobile subjectivities is not achieved through coercion but in a suggestive manner through shaping the field of action where mobilities are imagined, enacted and experienced: [v]ia particular forms of

knowledge, framings and practices, the subjects of governing are informed on how to behave, perform and shape their identities in ways that align with taken-for-granted knowledge and accepted true perceptions of the field, rather than commanded to particular behaviours' (Jensen, 2011, 259). Consequently, subjects' thoughts, actions and meanings on mobility are delimited. However, Jensen adds that as mobilities are embodied, spatial and material practices, power also works through kinetic, sensuous and ambient aspects experienced by spatialised mobile subjects. In other words, governmentality is not straight forwardly transferred onto people, because '[i]n parallel, power is distributed through emotional experiences and cultural differences are productive of particular mobile emotions' (Doughty & Murray 2016, 307).

Linking the governmentality perspective with spatialised and affective experiences of mobility creates an approach where representations (of children as cyclists) and experiences (of cycling children) can be analysed in the same framework. Indeed, our action research aimed to mix these different ways of seeing mobility by disrupting project rationalities with experimentation, co-research and dialogue concerning children's embodied, affective and social meanings of cycling. Hence, the concept of rationality is used here as an analytical tool, which is not limited to governance processes but expands to children's cycling imaginaries and experiences.

This concept of rationality is applied to action research methodology. There are various strands of applied social science that simultaneously seek to instil and study change. Action research generally refers to methodologies aiming to break prevailing rationales, appropriate new discourses, change practices and promote emancipatory change through learning and reflection with the participants (not on them) (Altrichter et al., 2002, Bradbury & Reason, 2003). It is an iterative process to reframe, reconceptualize and reflect with individuals, organizations or communities what kind of developments they are participating in. As a form of social activity, action research aims at opening new discursive spaces for dialogue and reflection (Wicks & Reason, 2009). Even though participants own interpretations are centre stage, research should also be able to grasp the unrecognized and unintended aspects of their reasoning and bring them into discussion (Friedman & Rogers, 2009).

Action researchers may adopt different, potentially overlapping roles when creating and maintaining spaces for social learning. Our roles in the project can be depicted as 'process facilitators' and 'knowledge brokers' (Wittmayer & Schäpke 2014). We aimed to distance ourselves from the emergence of different rationalities and merely bring the different stakeholders together, provide the space for interaction, document the process and leave it to the participants to direct and redirect reflections and actions (see section 2.3). However, we took an active role in introducing ideas for co-research

and conducting all data collection and analysis (see section 3). Even though majority of co-research was directed towards issues that were deemed relevant by the participants, we were involved as participant-researchers and in this regard cannot deny our presence in the development of the rationalities and representations subject to study. As a result, analysing and reporting the results in this paper is a process of reflection and reflexivity. Following Stirling (2006) reflection means reporting our observations whereas reflexivity means understanding one's own role as a part of the object, which in this case is limited to knowledge creation and distribution.

2.2 Case selection

Study context evidently shapes how rationalities emerge and change as 'governing is always embedded in particular rationalities which are local and historically produced' (Jensen 2011, 259). Our study took place in a municipality of approx. 150 000 habitants in Finland. Mode share of cycling is not high in the country (7,8%), but rates of children's autonomous mobility are high, and children are overrepresented among cyclists (Goel et al., 2022; Shaw et al., 2015). One part of the municipality's transport operations is a policy network for sustainable mobility that includes public, private and civic actors. In this network two cycling advocate NGOs, a local cycling club and a sustainable development citizens' association, had since long been promoting cycling by taking part in policy making, creating cycling promotion campaigns and organizing a range of cycling activities. Review of their past and current operations proved that the organisations had a well-established status in the local cycling policy process. Furthermore, these cycling advocates were linked to national level cycling policy as many of their initiatives were funded by the government, especially through mobility management funding that supports initiatives using education, communication, marketing, experiments and other 'soft' measures. This government funding was also used to fund the cycling promotion project subject to this paper. This way our study was entrenched in both national and local cycling policy processes.

In the initial discussions, the cycling advocates agreed on the importance of children's organized activities for their everyday mobilities and the idea about a joint initiative was presented to one of the biggest children's sports club in the area. The club community involved over 400 children in team sports multiple times a week. Children were aged from 9 to 14 and majority of them were boys. The club board and operational personnel uniformly accepted the idea about participating in the project.

The case offers an example of cycling promotion as a part of wider sustainable mobility framework and highlights two distinct features. First, it focuses on the use of communicative and 'soft' measures (apart from technology, land use, pricing etc.) where changes in mobility patterns are sought through education, marketing and active

involvement of people and different stakeholders in change processes (Banister 2008). Second, the case points how cycling policy can be implemented through partnerships, quasi-public networks and policy communities involving cycling advocates, activists and other key stakeholders across governance levels (Aldred, 2012, Balkmar, 2020, Spinney, 2010). While these governance processes and practices are not in the focus of this paper, their implications are discussed in the conclusions.

2.3 Data and analysis

In the course of the 18-month project there were four representatives from the cycling advocate NGOs and one municipality representative (cycling advocates), seven representatives of the sports club (club personnel) and four researchers that took part in the workshops and collaboration (together referred to as participants). Monthly workshops were organised (with few exceptions as the summer break) and issues were further discussed in more brief meetings and messaging. In total 42 meeting memos were collected.

The participants and workshops formed a communicative space (Wicks & Reason, 2009), which aimed to create a consensus about the project aims and plan a set of actions. In the role of 'process facilitators' researchers took care of workshop logistics, collected minutes and memos and described reflections and actions in a process description document, which was another key piece of data. To further illustrate participants' consensus on the initiative, infographics and figures were drawn, discussed and redrawn in the workshops. All documentation was available to the participants in a shared online file and they could be commented at any point to ensure their ownership of the project (Altrichter et al., 2002). Outside of the workshops the participants presented the project in relevant meetings, seminars, blogposts, news articles and social media. On multiple occasions the participants were also invited to local and national events discussing sustainable transport, cycling, childhood and health to provide inspiration and examples. A record was made on all these occasions and this outward communication supplemented the data from the workshops. Furthermore, the participants were individually interviewed at the beginning and end of the project to bring out potential tensions, discrepancies and insights that would not be stated in the workshops.

Negotiating, writing, sketching and presenting the project as well as the individual interviews made the participants continuously frame and explicate the initiative; what it was about, why it had been initiated, what was to be done and what could be expected as results. Here, the rationality of the project was formed, but also challenged and revamped throughout the project. Diverse complementary datasets ensured a comprehensive view on the process and the rationalities and representations that emerged.

The credibility of the findings was further supported by having multiple researchers analysing the data and reflecting on the process during and after the project.

3 Research process and results

The first part of our findings presented here concern the process that emerged through the collaboration among the participants. Typical to action research, our study created an iterative process where recursive cycles of action and reflection directed and redirected its focus (Altrichter et al., 2002). Action research cycles are often depicted consisting of planning, acting, observing (researching) and reflecting (ibid.). In our study the cycles were partly overlapping as workshops, co-research, communications and experiments were implemented in a constant stream (Fig. 7). Still, a chronological order of three cycles emerged in the analysis, in which each cycle constructed a different rationality and representations.

The participants were involved as co-researchers and a key discussion in the workshops was what kind of data should be collected from children and their parents. After each research act, the results were discussed in the workshops. This way co-research was entwined with the workshop dialogues and new knowledge reshaped the common understanding. Co-research but provided participants oversight on different issues, also allowed them to evaluate the outcomes of various actions.

It is the core of any analysis of discourse to consider what kind of knowledge is deemed (ir)relevant. Workshop reflections on the planning, implementation and results of co-research were key moments for the analysis of the rationalities and representations at different stages of the project. In a very concrete way, co-research served to change project rationality as reflecting on the findings redirected subsequent co-research and actions. There were of course multiple ways of problematizing the phenomena, but the workshops always aimed to reach a consensus to be able to work together in a coherent manner.

Based on the co-research and workshop insight, the participants planned a set of communications and practical experiments to children and parents to promote cycling, which added another important layer to the analysis of rationalities. As actions were derived from given rationalities, it offered us insight on their causal logics: how certain framings and knowledge could be turned into concrete actions and subsequently into new cycling practices.
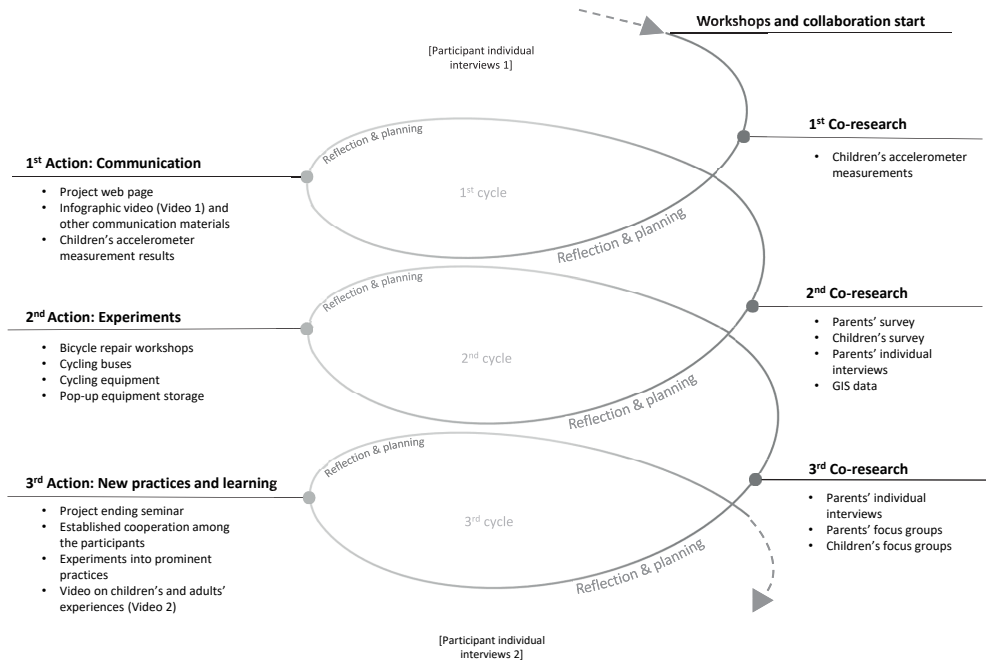
Figure 7 The interrelated cycles of reflection and action. Co-research, communication, experiments, and reflection recursively produced three cycles of reflection and action (applied from Straatemeier et al., 2010).

Next, the cycles of action and reflection are described more in detail and in 3.2 we turn to the rationalities and representations they produced regarding children as cyclists.

3.1. Cycles of reflection and action

The workshops started by creating a problem statement. The participants had only rarely seen or heard of children travelling to the organised activities by other modes than the car (this was later confirmed in the co-research). At the same time, it was discussed how Finland provides good conditions to CIM and that for example majority of journeys to school are done by foot or bicycle (see González et al., 2020). Considering this context, children's organised activities were perceived exceptionally problematic in instilling children's car-dependent lifestyles.

3.1.1. 1st cycle

At the outset of the project, the notion of cycling as instrumental to health promotion quickly became an influential discourse. It was emphasised that participation in organised activities does not guarantee sufficient levels of physical activity for children in

regard to global recommendations (see Bull et al., 2020). Hence, promoting cycling to and from the activities was an obvious solution as there are great amounts of unlocked health promotion potential in everyday transport (Workshop memo Feb/2020). Great deal of attention was directed towards children's parents, as they were deemed dictating children's activities and mobilities. According to workshop discussions, parents often have delusional ideas about their children's physical activity levels, as they think that by bringing children to organised activities would be enough for their healthy development (Workshop memo Feb/2020). In other words, parents were seen as not teaching children comprehensive 'active lifestyles', but the cycling promotion project provided the opportunity to educate them on the issue. Furthermore, it was deemed that parents' lack of knowledge was connected to a car-intensive culture of parenting (Workshop memo March/2020):

> *I mean I understand that you [parents] have a busy life and everything and that the car makes the organization so easy, but for many [parents] it's not enough that they drop them [children] off at the gate [outside the sports facility]. They stop the car, get out, open the gate, drive through, stop the car, get out, close the gate and drive right at the entrance so that their children would not need to walk those 200 hundred meters. (Club personnel, first round of interviews).*

The detailed quote highlights the notion that the practice of parents chauffeuring children was something beyond purely functional transport – it was an element of a parenting culture, which should be changed by communicating the benefits of cycling and by providing 'compelling evidence'. Here, co-research was deemed to provide a panacea. By measuring children's physical activity levels with accelerometers and showing parents the raw numbers on how active their children were compared to global physical activity recommendations, the project would provide incontestable arguments for cycling promotion (Workshop memo Feb/2020). To accommodate this, the children wore accelerometers for a week. The measurement results were compared to global physical activity recommendations and the comparisons were distributed to children and parents. At a later stage the measurements were replicated to provide the opportunity to compare results after assumedly taking up more cycling. These actions were further supported by producing research-based communication materials (e.g. Video 1) on cycling, children's health and transport emissions, which were communicated through club webpage, team meetings, mailing lists and other relevant means.

The environmental benefits of cycling constituted another key message that was communicated to the parents. It was seen that children's organised activities as a social movement must pay close attention to environmental responsibility, and car journeys to the activities form an important part of the overall carbon footprint (Workshop

memo Apr/2020). The participants described how the 'world has changed' and that environmental responsibility is a part of the 'new' expectations that are directed towards childhood institutions. More precisely, environmental responsibility constituted an important part of the 'quality' of the activities, that was valued by the 'clients' (parents):

> *We need to be good at this game [environmental responsibility], if we want to be an attractive and invigorating activity, and if we want to be a community, then we have to think all the time how can we be something more to that community… Today parents are so much more interested in what's going on with their children, and it challenges us, we need to be better and more open. That's the way the world goes now, otherwise we will not get along. (Club personnel, first round of interviews).*

Because of the positive environmental connotations, cycling was instrumentalised to create value and enhance the families' commitment to the activities in the competition against other forms of childhood leisure (Workshop memo May/2020). As with health promotion it was parents, not children, that should be informed about the issue. Still, the environmental responsibility was perceived as ancillary to health promotion and the order of these two discourses was the same across workshops and communications: the project was firstly about health promotion but bore also environmental benefits that should be highlighted to attract parents' attention.

3.1.2. 2nd cycle
Contrary to the participants' expectations, the accelerometer results and connected communications failed to create a distinctive reaction among the parents. The second cycle co-research entailed surveying and interviewing parents, which both showed that they did not feel that the feedback on their children's weekly physical activity or information on the benefits of children's cycling made a difference to how they perceived it. Rather, parents stated that they were already favouring independent and active modes of mobility for their children for health promotion and environmental reasons but had no real opportunity to support them more than they already did. Parents described that they faced an abundance of practical barriers, which made chauffeuring 'the only possible option' for children to get to the activities. As a result, the focus of the workshops shifted from educating parents on why childhood cycling must be promoted towards how children's cycling could be promoted by making practical arrangements (Workshop memo Oct/2020). A quote from one of the cycling advocates highlights this:

> *I see it in there [in my work] on a daily basis that cycling is very much about the practical stuff. If you have equipment and infrastructures that work, more and more people will do it' (Cycling advocate, first round of interviews).*

In other words, the attention shifted from communicating the instrumental benefits of children's cycling towards facilitating it as functional transport. The transition from car chauffeuring to cycling was now considered more of a logistic issue depending on 'unnegotiable' material, spatial and temporal circumstances. School schedules, distances, cycling equipment, weather conditions and transportation of children's sports equipment were considered more important barriers to children's cycling than a problematic parenting culture or parents' unawareness of childhood health promotion.

Applying this agenda to co-research, the participants sought to study parents' detailed insights on the barriers of children's cycling with a survey. In addition, the survey responses were combined with GIS data on children's homes, which provided understanding on what kinds of cycling distances were considered acceptable for children of different ages (9–14 -year-olds) and for what reasons. Another key topic of co-research and workshop discussions was parents' accounts on what kind of cycling equipment their children were lacking in order to cycle safely in winter conditions. Children were also addressed with a survey asking what kinds of material and spatial factors (cycling routes, parking, equipment etc.) prevented them from cycling.

After reflecting on the second cycle co-research results on multiple occasions, a range of experiments was planned and implemented. Cycling equipment (reflectors, lights, tires etc.) was distributed to those in need and bike repair workshops were organised for the children to learn how to maintain their bicycles independently. Adult led cycling buses (children cycling together) were organised to teach children direct routes to the activities and make them aware of any crossings and other potentially dangerous places. A pop-up equipment storage was set up at the sports facilities for that transportation of sporting equipment by bicycle would not cause problems.

3.1.3. 3rd cycle

The main task of the third cycle was to assess the successfulness of the project. A project ending seminar was organised where the participants and parents reflected on their experiences and different outcomes of the project. As for co-research, individual and focus group interviews were conducted with parents. Children's accounts were collected with focus group interviews.

Most of the parents and all participants considered the project a success. Majority of the children targeted by the experiments had started to cycle to the activities at least occasionally. The cycling advocates and club personnel continued to work together after the project as they had established a well working cooperation. Some experiments as children's bicycle repair shops and equipment storages were continued as new club practices after the project.

In the workshops, participants discussed why the project had managed to create a major shift (at least temporarily) from car-chauffeuring to children's independent cycling. They expressed content in the cooperation scheme and collaborative project management, which had formed a refined project where co-research facilitated knowledge-based interventions (Workshop memo April/2021). In other words, the project was considered a highly rational process were co-research provided the possibility to take informed decisions and measure the impacts in a way that is not possible in 'normal' cycling promotion projects (Workshop memo April/2021). However, this notion of a well-managed, rational and conscious project was challenged as the third cycle co-research results unfolded. Parents and children brought up many aspects that had not been discussed in the workshops, nor taken into account when planning the experiments.

For instance, the cycling buses were considered a key experiment among the participants, but many children stated that they had actually made them less eager to cycle. For example, a group of 12-year-olds discussed how the cycling buses felt 'silly' as they knew 'better and more fun' routes to the activities and preferred organizing their shared journeys independently. Children were more willing and able to find their ways to the activities in an autonomous manner than was estimated by the participants. The importance of autonomy was also apparent in children's rich descriptions on why cycling was more 'fun' than being chauffeured. Many liked the fact that they could decide their own schedules and have some 'loose time' with friends when cycling. There was a stark demarcation between this 'loose time' and time spent in the activities – both were fun, both entailed spending time with friends but the experience of being together was different. Importantly, children's and parents' accounts pointed that there was a strong sense of community among the children and cycling became a new way to cherish it.

Children's and parents' focus groups also pointed that the new cycling practices were not limited to the journeys from home to the activities as planned in the experiments. Children did not always go straight home after the activities, but spontaneously went about other self-organised recreational activities or just 'hung out'. This was very different to the earlier situation where children would be individually chauffeured home

straight after the activities. Moreover, parents reported that children had started to 'go out' and engage in self-organised activities more flexibly than before, as they presumed less dependence on their parents chauffeuring. Importantly, many parents stated that their own and their children's notions of 'cyclable' distances had changed.

The second cycle experiments had aimed to solve various practical, material and spatial problems, but parents saw that the success of the project resulted mainly from other factors. Many of them discussed children's emotions and sociality. 'Enthusiasm', 'joy', 'content', 'pride', 'community' and 'ability to be amongst friends' instilled by the new cycling practices were perceived the main reason why children had 'a newfound autonomous conduct'. As parents discussed the relationships between autonomy, positive emotion and friendships in the ending seminar and focus group interviews, they produced a strong narrative on children's cycling that was not retelling the objectives of the workshops.

These insights were discussed among the participants in the last workshops and the project ending individual interviews. Some of them rightly reflected that there had been multiple occasions where terms like 'autonomy' and 'communality' had been brought up as potential positive outcomes for children, but that project had been unable or unwilling to further elaborate on them in relation to cycling. As one participant stated:

> On some level, I knew that these things [autonomy, positive emotions and friend-ships] play a role, I've worked with kids for so long. But I think we [participants] just couldn't touch those things. I mean it comes only through experimenting, that they are actualized. (Cycling advocate, second round of interviews).

At the end of the project the participants produced another video where children and parents described their experiences. This communication material was very different to those produced in the first cycle of the project listing health and environmental benefits of cycling. The practical, spatial and material issues that had been considered the drivers of change during the second cycle were not discussed either. Instead, as one parent noted on the video, the '*ease of shifting from chauffeuring to cycling owed to the shared enthusiasm among the kids*' (Video 2).

3.2. Rationalities and representations of children as cyclists

In the first cycle of reflection and action participants perceived childhood cycling almost solely instrumental, which chimes with our critical remarks in the introduction of the paper. This rationality entailed little regard to how children might perceive cycling and how their specific meanings could be addressed in the transition from

adult chauffeuring to children's independent cycling. Health promotion was the ultimate goal of cycling and children's bodily movements needed to be boosted by adults (as parents, cycling advocates and children's sports clubs) for mutual benefit that was objectively outlined in global physical activity recommendations. The environmental meanings of cycling were to support this mission through creating an appealing ancillary argument in the attempt to convince parents on the benefits of cycling promotion.

The representation of cycling was constructed as making use of the 'dead time' spent travelling. For example, one set of communication materials included an example week schedule of 'a child's activity possibilities' that summed up every minute of physical activity accumulated from organised activities, unorganized play, PE classes, school recess etc. and highlighted how much more physical activity could be gained from everyday cycling. The rationality seeking to unlock the health promotion potential of everyday transport (Workshop memo Feb/2020) considered children's mobilities as a disutility – useless time spent between destinations, which could be harnessed to provide quantifiable benefits.

Importantly, the first cycle rationality suggested that parents and other adults would uniformly dictate children's activities and mobilities. Subsequently, creating a better understanding among the parents on the benefits of cycling and changing the parenting culture would yield results. Chiming with earlier studies on pre-emptive health promotion policy (Evans, 2010, Evans & Colls, 2011), the representation of children was the biological matter of their moving bodies, the movements of which were to be planned and monitored by the participants and the parents. At the same time this healthy movement was supposed to be produced through children's independent action, which created a major paradox.

In the second cycle, the rationality of cycling promotion geared towards facilitating children's cycling as functional transport and the causal logic turned from socio-cultural aspects towards material and spatial aspects. Chauffeuring as an issue of parenting culture was left on the background, as surveyed and interviewed parents appealed to material, spatial and temporal circumstances, that were considered something concrete and unnegotiable. Workshops discussing the planning and implementation of the practical experiments were especially illustrative of the second cycle rationality.

No critical discussion on the co-research findings on the parents' views developed in the workshops. This was evidently problematic in an action research setting that seeks to break prevailing rationalities and create alternative imaginaries. Barker (2008) has performed similar research on children's journeys to schools and discussed the challenges of inviting participants to plan research. He found that participants were solely

interested in using quantitative methods and found qualitative data irrelevant, which crippled the project's ability to instil change as it remained stuck in a positivist notion of transport. Similarly, in our study the second cycle rationality failed to see great potential in qualitative data. Yet, even though the cycling advocates and club personnel showed little interest towards qualitative methods, the research team wanted to use them and play the active role of the 'knowledge broker' (Wittmayer & Schäpke, 2014). Individual interviews were conducted in addition to quantitative surveying and GIS analyses, but these results did not spark discussion in the workshops. The notion of a knowledge-based intervention was that we should use quantitative methods to ask people what works for them and implement their ideas as carefully as possible.

Following Cox (2019, 41-42) we argue that this kind of an approach remains stuck in prevailing social imaginaries within which cycling futures are created and most probably serves to keep cycling marginalized. Unrecognized or unintended aspects of the parents' reasoning were not scrutinized, even though some of the accounts were clearly contradictory. For example, many parents stated that chauffeuring was the only option because of their work life schedules, even though the whole idea of promoting children's autonomous mobility was to make children less dependent on their parents' schedules. The experiments were not considered means to create new experiences and learning (Laakso, 2019) but means to test what practical arrangements make children choose cycling (Workshop memo Dec/2020).

Co-research, experiments and workshop reflections during the second cycle produced a representation of cycling as functional transport to which individuals engage based on rational decision making (Aldred, 2015). Scholars have pointed to the problems of seeing mobility as a de-socialized act of movement from A to B and mobile subjects as a uniform group of purely rational and individualised actors (Aldred, 2015, Manderscheid, 2014). Children's role as informants in the co-research was reduced to inspecting objectively recognizable deficiencies in the cycling environment (as cycling routes), whereas adults (parents and participants) were considered making statements on what was actually possible and what was needed. As cyclists, children were assumed to value the functional ends of mobility. This representation of children as 'incompetent adults' (Spinney, 2020, 69) was further solidified by extensive workshop discussions on how children should be educated and equipped to create legitimate cycling practices, not just fooling around (Workshop memo Dec/2020).

In the third cycle co-research results pointed that the experiments had been successful, but mostly through mechanisms that were not recognized in the workshops beforehand. Co-researching parents' and children's experiences made the participants assess the functioning of the project in a different way, where autonomy, positive

emotions and friendships formed a rationality, that stood apart from instrumental and functional rationalities. The participants deemed that these qualities were something that could only be grasped through experimenting (or more precisely adults supporting children in experimenting), even though the experiments were planned based on a very different rationality and notion of change. Here, our findings indicate that the value of mobility experiments is not in their ability to straightforwardly sort out scalable solutions or best practices, but in their ability to make various social dynamics available for observation (Laakso, 2019).

The third cycle also showed how aiming to promote childhood cycling on specific predefined journeys might be artificial. As children started developing new cycling practices, this was not limited to the journeys to the activities even though this had been the sole focus of the project. Destinations, schedules and distances that had been perceived to dictate children's mobilities, were all renegotiated among children and parents. Yet, it is crucial to understand that this communal renegotiation was built on a pre-existing set of social ties and sense of community among children and adults, where no-one had to go about changing their views and practices on their own.

Hence, at the end of the project a third representation of children as cyclists emerged, where cycling practices were understood as social and affective and children's experiences and agency were considered central. The logic of change towards more cycling shifted from benefit driven and purely rational and functional premises towards lived and embodied experiences. Following Cupples and Ridley (2008) our results point that people don't cycle (or facilitate their children's cycling) because they want to establish themselves as virtuous citizens that boost sustainable transport and health promotion agendas, but because it works for them affectively. This is where Jensen's (2011) notion of 'seeing mobilities' is especially fruitful; it helps us in understanding how power of mobility rationalities is not only a question of governance, but can also work through the kinetic, sensuous and affective. Evidently, these qualities are not easily expressed through language. For example, in the focus groups parents discussed how none of them had really talked about the new cycling practices with their children, but stated that merely witnessing the myriad emotions in their own and other people's children had made them supportive of the project despite they had previously pointed out an abundance of practical barriers. Similarly, children in the focus groups emphasised the emotional and social qualities of cycling but struggled to find words on why cycling was 'fun'. Still, knowledge on the emergence of these shared affective and social experiences among children and parents led to the renegotiation of rationalities and representations of the project.

Overall, our findings point to the relational emergence of children's cycling practices and their embeddedness in political, institutional and social relations. National and local sustainable transport policy processes, organised activities as an important childhood institution as well as everyday social relations with peers and parents all played a role in shaping the rationalities of the project. The findings highlight how children actively negotiate their mobilities in these relations through different ways, even more so if their autonomy is supported for example through mobility experiments. In result the alternative ways of seeing mobility (despite their fleeting nature) were considered legitimate among the project organisers and added to defining what a particular mobility practice, as childhood cycling, is.

4. Conclusions

Cox (2019, 41) argues that '[l]ack of reflexivity in scholarship produces normative or imaginative creations of future possibilities that are severely constrained by their cultural origins'. This paper has problematized the 'cultural origins' of policy and research on childhood cycling and CIM and aimed at opening up new future possibilities through expanding our mobility language (Jensen, 2011). We created a space for reflection and reflexivity, which supported a social learning process where rationalities of childhood cycling promotion were called into question. Cox (ibid.) continues that, '[n]ormative suggestions for the benefits of increased cycling rates rarely consider specifically to whom they are addressed or what increased cycling might look like (and require)'. We investigated cycling promotion specifically to children and aimed to find out how knowledge on the experiences of this specific group shaped participants' rationalities on what cycling is.

The argument of the paper is not that there was a normative progression from 'worse' to 'better' rationalities in the process. Rather we see that all three rationalities were in some way necessary and mutually constructive. For instance, our research funding and cycling promotion project funding relied on the instrumental rationality. Second, the notion of children's cycling as functional transport was key in making the project credible and understandable for all parties involved and many experiments were highly relevant for example regarding children's transport safety. Even though we've included critical remarks that chime with previous findings on co-researching childhood cycling promotion (Barker, 2008), we don't see that the participants were misinformed in applying instrumental and functional meanings and that the third cycle rationality was the 'right' form of understanding. Rather the argument is that rationalities conflict, but also co-exist and fluctuate as mobility policy and governance intersect with everyday life with all its embodied, affective and social properties

(Jensen, 2011). As Doughty and Murray (2016, 303) put it, 'movement is a social and cultural practice in constant negotiation and (re)production' and if anything the normative conclusion of this paper is that the hegemony of any one rationality is likely to be detrimental to cycling promotion.

Effectively, this is to say that rationalities have causal properties that influence what kinds of mobility practices are adopted. As Jensen (2011) argues 'rationalities provide a blueprint for logics, i.e. what can meaningfully be seen as (policy) problems, as causes and effects, and who can legitimately govern and who can be governed'. Action research methodology can serve to reveal the causal logics of different rationalities and instil learning that changes participant's views. Our study emphasizes how childhood cycling promotion is likely to remain ignorant on the actual social mechanisms that get children to cycle if only the instrumental and functional rationalities dictate how and why various promotion efforts are implemented and evaluated. If initiatives, policies and research only focus on the outcomes, rather than the processes that lead to them, the change mechanisms remain black boxed and causal properties are falsely attributed (Pawson and Tilley 1997). In our case, children's autonomy, positive emotion and friendships were key mechanisms for the adoption of new cycling practices as they impacted both children and adults. Yet, without co-research and workshop refection, the participants would have been left ignorant of their causal properties and seen the project as a rational and well-informed effort where instrumental and functional rationalities were applied to make effective interventions. In other words, despite cycling is a fantastic way to address societal problems (as childhood health and transport emissions) and material and spatial functionality of transport evidently matters, the social and affective meanings and experiences that make people cycle must be carefully taken to account in order to make any promotion effort realistic (Pawson & Tilley, 1997).

Analysing the multifaceted causalities of cycling promotion is important for cycling research to remain alert on the unintended consequences, discrepancies and the political nature of creating action oriented and participatory research designs (te Brömmelstroet et al., 2020). This means also consciousness and critical insight on the political context and wider power structures. Relevant to our project, Aldred (2012) has argued how outsourcing cycling promotion to private, quasi-private, and voluntary organisations can serve to side-line cycling as a strategically important transport mode. Spinneys (2020) notion of biopolitics is similarly pertinent in that our project aimed to produce (productive) cycling subjectivities rather than inclusive spaces for children's cycling. Still, at the same time it is evident that when civil society actors are successfully included in policy processes they may bring in important ways of seeing that complement the rationalities of planners and other professionals, and transition

to sustainable mobility cannot solely rely on building spaces (Banister, 2008). Thus, further research on cycling advocacy and childhood mobilities from the policy perspective is needed to build knowledge on these ambivalences. Further research is also needed to understand what rationalities and ways of seeing shape childhood cycling promotion across geographies, cultures and genders as here we have focused in the Finnish context and majority of the children taking part in the activities were boys.

Finally, our findings prompt conceptual considerations in relation to CIM. This paper complements the account of Mikkelsen and Christensen (2009) in that CIM is largely a taken-for-granted positive term that obscures the emergence of children's mobilities in their social, institutional and political context. We argue that children's autonomous mobility is a better term, that could be used to avoid such paradoxes, but which emphasizes the centrality of self-imposed conduct. This kind of mobility language is more likely to create rationalities that are based on more realistic and inclusive representations of children as mobile subjects.

Chapter 4

Chapter 5

From intensive car-parenting to enabling childhood velonomy? Explaining parents' representations of children's leisure mobilities[35]

Abstract

Intensive parenting has become a key term for analysing the pressures and priorities of contemporary western parenting culture. For mobility studies it provides a discursive framework for understanding why children's leisure has shifted from free play and mobility towards various adult-led organised activities and why parents deem necessary to control children's leisure journeys in an unprecedented manner. Most of the research on parenting and mobility has explained these trends with urban risks and safeguarding, but this paper highlights how parents also control, manage and enable children's mobility to resource and enrich them with various dispositions. We use children's mobility experiments and parents' interviews to explain two contrasting representations of children's mobility – intensive car-parenting and childhood velonomy – in a local community in Finland. The paper sheds new light on how community and place shape parents' notions of parenting, childhood and mobility.

1 Introduction

Sharon Hays (1996) was one of the first observers of intensive parenting. Focusing on mothers' experiences she sought to explain why parenting has become such a 'child-centred, expert-guided, emotionally absorbing, labour intensive, and financially expensive' enterprise (ibid., 8) and why parents have started to manage and monitor children's lives more than before. Childrearing practices have become subject to intense public scrutiny and parents are expected to align their actions into a coherent parenting strategy, which optimises the well-being and success of future generations (Furedi, 2002; Lee et al., 2014). The contemporary western parenting discourse especially appreciates children's organised leisure activities that are posited to cultivate and enrich children with a range of future assets and dispositions (Lareau, 2003; Vincent & Ball, 2007; Vincent & Maxwell, 2016). Subsequently, childhood is increasingly 'institutionalised' as children's leisure has shifted from free roaming and unorganized play towards adult-supervised activities organized by public, private and civic sectors (Holloway & Pimlott-Wilson, 2014).

All this evidently affects children's mobility patterns. Children's autonomous and human-powered travel has decreased in the westernized world in recent decades (Shaw et al., 2015). In parallel their car chauffeuring has increased, and studies suggest that children's journeys to organised activities are even more car-dependent than other journeys (Fyhri et al., 2011; Hjorthol & Fyhri, 2009; Lareau & Weininger, 2008). Changes in parenting culture and the socio-spatial organisation of childhood seem to favour car-parenting at the expense of children's autonomous movement.

Studies have analysed parent-child mobility (by car and other modes) as a care practice and how it is entangled with risk-conscious aspirations to limit, monitor and control children's independent mobility (Barker, 2011; Dowling & Maalsen, 2020; Gilow, 2020; McLaren & Parusel, 2015; Murray, 2009; Waitt & Harada, 2016), but also how parents (re)negotiate urban risks in order to facilitate and enable children's autonomous mobility (Joelsson, 2019; Kullman, 2010; Ross, 2007). However, risk-consciousness is hardly the all-encompassing perspective that explains the relationship between contemporary parenting culture and children's mobilities across geographies. Yet, minimal attention has been paid to a key aspect of intensive parenting: how parents aim to resource and cultivate children in and through mobility as objects of social investment and 'current and future projects who can be positively developed through their sequestering into informal (as well as formal) learning environments in diverse institutional spaces' (Holloway & Pimlott-Wilson 2014, 624).

Against this backdrop we argue that to understand parenting, mobility and childhood, we need nuanced analyses of the interplay between lived and embodied social and material practices of children's mobility and parent's representations of those practices (see Creswell, 2010). Crucially, we need to analyse how these experiences and representations are produced across socio-spatial contexts: how intensive parenting discourse is locally manifested (Faircloth, 2014) and how local community relations shape notions of 'good' parenting and mobility.

The paper describes findings from a middle-class suburban context in Finland where we introduced mobility experiments in children's organised activities to create a shift in children's mobility practices and parents' mobility representations. After describing our theoretical and methodological framework, we analyse, first, how parents constructed the practices of car-parenting as a representation of intensive parenting. Second, we explain why in the course of the experiments the same parents constructed childhood velonomy as a contrasting mobility representation that emphasised children's autonomy through using and moving by bicycle. With this change-oriented research design the study provides new insights why local mobility representations matter to children's mobility patterns.

2 Intensive parenting, organised activities and domestic mobility work

Research on contemporary parenting culture and childhood suggests that parents manage children's lives more than ever and are also urged to do so by policymakers and experts who are preoccupied about parents' performance in bringing up future generations (Lee et al., 2014; Hays, 1996; Prout, 2000). Terms like helicopter parenting, overparenting and tiger parenting have become widely used in public debate and research, aiming to grasp the cultural script that shapes childrearing practices. As Furedi puts it in his book Paranoid parenting (2002, 5): '[t]raditionally, good parenting has been associated with nurturing, stimulating and socialising children. Today it is associated with monitoring their activities.' Even tough parents from different class and gender backgrounds face different structural constraints, it seems that one way or the other all parents need to negotiate their practices in relation to the ideals of intensive parenting (Ishizuka, 2019).

Scholars attest that intensive parenting ideology has emerged through responsibilisation of parents according to neoliberal discourse. Parents are individualised and autonomised as sole accountables of children's well-being and ability to run societies as 'future adults' (Geinger et al., 2013; Fargion, 2021; Vincent and Maxwell, 2016).

Thus, parenting as a social construction is based on the notion that the actions of individual parents are the ultimate reason for children's success or failure, obscuring the notion of childrearing as a social issue and a shared responsibility between private and public domains. This parental determinism is accompanied by similar ideas about childhood: children are considered vulnerable and 'at risk', because early life experiences set people on locked in trajectories for the rest of their lives (Furedi, 2002; Hays, 1996; Lee et al., 2010).

Positing causal relationships between everyday parenting and children's myriad future dispositions leads to the construction of parenting as a performance and a social investment where every act should be geared towards cultivating resilient, autonomous and competent achievers of tomorrow (Geinger et al., 2013; Hoffman, 2010; Lareau, 2003; Lee et al., 2010). What used to be mundane practices as disciplining, feeding and playing with children have become subject to intensive public debate that assesses the causal effects of parenting on future generations and societies (Lee et al., 2014). Parents are urged to align their practices into a strategy, that is clearly intentional, target-oriented and highly conscious of risks (Faircloth, 2014; Hoffman, 2010; Lee et al., 2010). The realm of parenting is also expanding, and more and more aspects of children's everyday life are considered a part of it.

As a part of this trend, we seek to explain why managing children's leisure mobility (often by car) especially to and from their organised activities is a crucial part of many parents' parenting strategy. Lareau (2003) coined the term concerted cultivation to explain why children's participation in organised activities is so important to many parents. Studies across contexts during the last two decades have described how activities are posited to enrich and cultivate children with various skills and dispositions that are considered invaluable later in life (Holloway & Pimlott-Wilson, 2014; Lareau 2003; Vincent & Ball, 2007; Vincent & Maxwell 2016). Subsequently, the 'good' parent's moral duty is to invest time, money and effort in these activities and car chauffeuring is a crucial part of this investment (Lareau & Weininger, 2008; Wheeler & Green, 2019). It is a form of domestic mobility work, which includes all informal work concerning the private sphere that is performed through mobility (e.g., groceries, escorting children and other similar tasks) (Barker, 2011; Gilow, 2020; McLaren & Parusel, 2015). Lareau & Weininger (2008) have explained how intensive parenting is manifested through this kind of work in hectic activity schedules and spatiotemporal 'pressure points' that are emotionally laden with cultural ideals of 'good' parenting. Importantly, domestic mobility work is not limited to driving a car but also entails a complex set of routines and responsibilities beyond the actual journeys, making it ever more laborious for parents (Lareau & Weininger, 2008; McLaren & Parusel, 2015; Wheeler & Green, 2019). Still, the car enables interweaving the spatiotemporally

Chapter 5

fractured family life and demands of contemporary parenting into a coherent whole. Car-parenting provides an ideal social space for flows of affect that shape family roles, relations and the experiences of being a 'good' parent (Laurier et al., 2008; Waitt & Harada 2016).

3 Parenting through enabling childhood velonomy?

Yet, seemingly in contrast with the tendency towards increasing control and management of children's lives, some parents regard enabling children's autonomous mobility as an act of 'good' parenting (Joelsson, 2019; Kullman, 2010). Indeed, parents' responses to the intensive parenting logic are not uniform – it rather works as a cultural script in relation to which parents position themselves when negotiating their own practices, parenting roles and identities (Faircloth, 2014). Studies should not regard parents as passive victims of the ideology, but agents who are actively reproducing or countering it in their local contexts and social networks (Geinger at al., 2013; Perrier, 2013). This paper provides new insight in these respects by describing how a local community of parents renegotiates their normative representations of children's mobility, when there is a collective shift away from extensive chauffeuring towards children's autonomous mobility. Importantly, our data does not explain this shift respective to urban risks and safeguarding (e.g. McLaren & Parusel, 2015; Murray, 2009), but on how parents construct different mobilities as means to resource and enrich children's lives.

As a counterpart for car-parenting, we use the term velonomy (translated from francophone vélonomie, a neologism mixing 'velo' and 'autonomy') to describe the emergence of a parenting logic of enabling children's autonomous mobility by bicycle. It is used by authors studying how people's engagement with the bicycle through various practices of using, moving and repairing can foster a comprehensive community culture of cycling (Abord de Chatillon & Eskenazi, 2022; Mundler & Rérat, 2018; Rigal, 2022). By conceptualising cycling as a cultural and political event, these studies have shown how the ability to manage the bicycle and negotiate the urban space with it can promote a sense of autonomy, agency and empowerment especially for underprivileged groups (Mundler & Rérat, 2018) but also an ideology that is critical towards the hierarchies created by the car-system (Rigal, 2022). In both respects, velonomy is about broadening the imagination of what kinds of mobilities and activities are desirable and possible for given subjectivities. Thus, it has important parallels with the concept of motility – a sort of mobility capital and people's potential to move (Kaufmann et al., 2004) as well as so called capabilities approaches (Sen, 1999).

Yet, Schwanen (2021b) has noted that uncritical application of any such theoretical resources that emphasise the acquisition of 'potentials' or 'capabilities' through mobility might lead to individualistic interpretations and sway the meaning of community and place in shaping mobilities. As implied in earlier studies, velonomy is not about developing autonomous bicycle citizens in the individual level, but about a collective and social process. It describes how communities socialise people into urban cycling through generating skills, material assets and shared meanings through community relations (Abord de Chatillon & Eskenazi, 2022; Rigal, 2022). By focusing on parenting discourse, we understand the construction of velonomy as a process 'through which desirable qualities and goals worth pursuing emerge out of – and co-evolve with – actions, experiences and (social) learning in particular social collectives, places and spaces' (Schwanen 2021b, 21). Both, velonomy and car-parenting are socially constructed and ideologically rooted representations of children's mobility in a community of parents that emerge through shared experiences.

Here it is also useful to draw parallels with relevant studies on children's independent mobility, especially those that have developed a critical stance towards the notion of 'independence' and conceptualised mobility as a relational practice. Range of studies has argued how children's mobility without the physical presence of adults remains socially 'dependent' as it is negotiated in the web of relations among peers, adults, objects, technologies and spaces (Christensen & Mikkelsen, 2009; Kullman, 2010; Nansen et al., 2015: Milne, 2009; Wales et al., 2021). McIlvenny (2015) has described how cycling can create social spaces for children that are very much comparable to the car as a way of being 'mobile with'. Mobile children also appreciate playfulness, exploration and other non-functional features of mobility, that further complicates the relational analysis of their mobilities (Horton et al., 2014; Kullman, 2010; Ross, 2007). For instance, it might be difficult to distinct what counts as a 'journey', if being 'mobile with' is a way to explore, hang out and 'do' friendship. Still, these mobility practices are far from being 'unproductive': mobile children develop emplaced knowledge, social awareness and other meaningful dispositions through embodied engagement with places and social settings they encounter (Christensen, 2003; Milne, 2009; Ross, 2007). All these insights help us to interpret the phenomena that parents include and leave out of their representation of childhood velonomy.

4 Research design and methodology

The study was conducted in the municipality of Jyväskylä of approximately 145 000 habitants in Finland. Low urban density and snowy winter conditions might inhibit children's autonomous cycling in the city, but relatively low levels of urban

Chapter 5

risks are likely to support it. Families subject to study were living in suburban middle-class neighbourhoods. At the project outset a group of 24 parents whose children (10-12-year-olds) were participating in organised activities in a local sports club were interviewed individually. After this, we implemented a range of mobility experiments aiming to provide children with various opportunities to engage with and 'socialise around' bicycle use (see Table 3). Participation to the experiments was voluntary and free of charge. Approximately 2/3 of the children whose parents were interviewed took part in all the experiments and 1/3 to all except for one. Four months after the experiments had started, the parents were invited to a workshop. They were asked to reflect the shift in children's mobility practices first with the whole group and immediately after in focus group sessions. Two weeks after the workshop a final round of individual interviews was conducted.

12 of the interviewees were women and 12 men. 21 were from conjugal families and three were single parents. Number of children in the families ranged from 1-5 aged 5-17 (although only one child per family was taking part in the experiments). Almost all these children were actively taking part in some sort of organised activities, which means that all interviewees had experience from them as a parenting setting. All interviewees represented backgrounds that can be considered middle-class: educated, native Finns with professional rather than manual work positions.

	Data (results section 5.1)	Mobility experiments					Data (results section 5.2)		
	Parents' individual interviews	Bike repair workshops	Bike buses	Cycling challenges	Cycling equipment giveaways	Pop up equipment storage	Parents' workshop	Parents' focus groups	Parents' individual interviews
Activity		Sessions where children could fix and maintain their bikes with adult support	Organised journeys from children's homes to the activities	Mobile app competitions measuring travel distances	Essential cycling gear was provided for those in need	Space to store sports gears at the venues			
Average number of participants per event	24 parents	22 children	28 children	35 children	16 children	35 children	24 parents	6 parents	24 parents
Number of events	1	5	4	4	2	n/a	1	4	1

Table 3. Overview of the project and data creation in chronological order (author).

Chapter 5

4.1 Epistemological framework

Discourse analytical approaches have provided key insight on how intensive parenting is produced in different levels of society and how parents reproduce or counter it (Geinger et al., 2013; Perrier, 2013). Here, intensive parenting discourse and related mobility representations are analysed with an application of Fairclough's (2003; 2013) critical discourse analysis (CDA), which offers an epistemological framework for critical social analysis of texts and their interconnectedness with social practices and structures. Fairclough attests that social practices are networked, and their semiotic dimension is called orders of discourse. Texts work and rework these relationships, which may lead to changes in practices and their underlying structures: discourses and representations can be operationalised as new ways of interacting (enactment), being (inculcation) and physical materialisation. Hence, this relational-dialectical analysis of discourse is not solely explaining the making of meaning (semiosis) but also the relations between semiotic and other social elements as (parenting) roles and ways of interacting (Fairclough, 2013).

In other words, Fairclough's notion of discourse appreciates the meaning of the social context where they emerge. Following this kind of epistemology Freudendal-Pedersen (2009; 2010) has analysed how communities produce mobility narratives and how they may be disrupted through experimental research designs. Narratives are guided by shared experiences and representations as individuals negotiate mobilities respective to others in similar life situations: '[u]nderstanding the importance of communities in relation to individual's ontological security whilst maintaining a community perspective is essential in exploring mobilities' (Freudendal-Pedersen et al., 2010, 28). Similarly, regarding parenting, local adult-child communities create notions of 'people like us' based on similar parenting ideals and driven by a shared sense of 'how we do things' (Vincent et al., 2017; Vincent & Maxwell, 2016; Wheeler & Green, 2019). While it is known that notions of 'good' parenting, mobility and childhood are filtered through localised community discourses and local moral geographies (Barker, 2011; Murray, 2009), previous research has not analysed the interplay of shared, lived and embodied experiences of mobility and mobility representations, in the way we do here.

4.2 Analysis

Interviews, focus groups and the parents' workshop were audio recorded and transcribed. We started with a theory driven analysis focusing on language use: how carparenting and velonomy were constructed respective to intensive parenting discourse. The representations were produced by categorising texts into themes and analysing their relations. Second, we analysed how the social relations of the local community and the mobility experiments dialectically shaped/were shaped by the mobility rep-

resentations. I.e., to understand the entanglement of mobility representations and practices in the social dynamics among children and adults, the second part of analysis examined how the social roles, interactions and new experiences shaped the production of the texts and vice versa (Fairclough, 2013). In the results section these two phases are confounded to provide a comprehensive view on the study. We start by explaining car-parenting as a representation of intensive parenting and how this representation was validated in the community. Then we describe how after the experiments the parents constructed childhood velonomy as a representation of so called 'enabling but engaged' parenting (Joelsson, 2019). In the end we critically examine this discursive shift and describe how the mobility representations were operationalised in the social and material dynamics among adults and children.

5 Results

5.1 Car-parenting as a representation of intensive parenting

As suggested in earlier studies, children's journeys to organised activities were highly car-dependent and subsequently parents' afterwork time was highly scheduled (Hjorthol & Fyhri, 2009; Lareau & Weininger, 2008; Wheeler & Green, 2019). Especially in families with two or more children, descriptions of 'speedy', 'hectic', and even 'stressful' everyday life were frequent, and the parents' subjective experience of time was intermittent and oppressive. They needed to constantly plan ahead in a systematic manner and 'could not afford slackening' or 'get disturbed' as any 'hick-ups' could make the organization fall apart. Time pressures required compromising on various activities and principles as parents' own leisure activities and the benefits of 'slower' transport modes as higher physical activity and lower traffic emissions. Especially the coordination of work life and chauffeuring was deemed challenging: almost all parents regularly made flexible arrangements at work to be able to leave early for chauffeuring and some continued working from the car or from the facilities where children's activities took place. Most parents saw that the car was the 'only option' to manage these demands across time and space:

> It's a terrible amount of organising honestly. Every Sunday we check the upcoming week, if there are those tight spots when we need to ask for help from someone [for chauffeuring]. How we ensure that my husband gets his work done etc. Everyday life is all about being organized. (Interview round 1, mother of three.)

The 'tight spots' highlighted in the quote are discussed by Lareau and Weininger (2008) as spatial and temporal 'pressure points' that demand foresight and organisa-

tion. Some parents even had to make trade-offs between paid work and mobility work to overcome them. A single mother explained that she liked her job but could work only part-time to make her children's participation in the activities possible through chauffeuring:

> Well I just can't [work more]. And I can't really want it because I can't do it… I just want to give my children what I can. I want to raise them to become good boys and that is more important than my career. (Interview round 1, single mother of three.)

In all these respects chauffeuring children was a form of unpaid, informal labour what Gilow (2020) has termed domestic mobility work. Below we show why parents were so motivated to perform such work and how it was entangled with notions of 'good' parenting and childhood. While parenting and mobility has most often been discussed in relation to urban and traffic related risks (e.g. McLaren & Parusel, 2015; Murray, 2009), our findings complement these insights by explaining how managing, controlling and enabling children's mobility can also be a way to resource and enrich them.

According to parents performing mobility work was only a downside of the fact they were actively producing a range of assets for their children through managing their leisure mobilities. The motivation to spend 'ridiculous amounts of time behind the wheel' was derived from the recognition of the resourcing and enriching effects of children's leisure life in organised activities. Enduring mobility work was part of a 'demanding phase of life', which 'would not last forever' and that would 'pay off' for the children. In line with literatures on concerted cultivation, parents provided detailed descriptions on what kinds of skills and assets are important for 'success' in different walks of life and how the organised activities cultivated them (Lareau, 2003; Vincent & Ball, 2007; Vincent & Maxwell, 2016). Skills were accrued by being involved in something 'proper', 'goal-oriented' and 'reasonable' that teaches children 'how things work' and that renders them more 'competent' and 'agentic' through myriad ways. Parents described how 'perseverance', 'resilience', 'determination' as well as 'creativity', 'collaboration skills' and 'empathy' were accrued through competing, staying committed in self-imposed activity, working together towards common goals and surviving demanding situations. Many parents explicitly considered children's activities complementary to formal school education.

To achieve this enrichment the parents' role was to ensure the 'right' socio-spatial organisation of children's leisure through mobility work. Changes in the cultivating socio-spatial organisation would mean bad alternatives: 'just staying home', 'loitering around' or 'letting the Playstation to raise my child' and all parents deemed that quitting the activities was only acceptable if there were new ones to replace the cur-

rent one(s). Because organised activities represented the appropriate socio-spatial organisation of 'good' childhood, it made chauffeuring children there a concrete act of 'good' parenting and this notion would make every bit of 'stress' and compromising worthwhile. The way the parents tackled the compromises and ambivalences of chauffeuring was apparent when they described positive emotions during the car rides and the feeling that 'we are doing the right things':

> … *chauffeuring is the necessary evil. But on the other hand, if you look at it more philosophically, its time you spent together, on the way you can discuss with the kids and I feel I am doing something useful with my time. Even though it feels sometimes that we could be smarter about it by car-pooling etc., the girls and boys are going there [activities] to do something reasonable when you take them there, and that is how I justify it [chauffeuring by private car]. (Interview round 1, father of two.)*

As the quote implies, the car offered an ideal space to affectively demonstrate to children that their participation to the activities is valued. Some of the parents explicitly stated that showing affection and involvement by chauffeuring prevented children 'slipping away' from the activities. Letting children manage the journeys to the activities themselves would be at best 'unsupportive' and at worst straightforwardly 'hampering'. As such, the car was an integral part of the appropriate socio-spatial organisation of childhood. It provided undistracted moments with children for emotional resourcing and confounded organised activities and practices of 'doing family' inside the car (Laurier et al., 2008; Waitt & Harada, 2016). Chauffeuring was a way to 'stay on track' what is going on in children's lives, 'cheer on' their participation in the activities and just 'be involved':

> …*[in the car] we talk what is going on and if they have a competition coming, we discuss about that and cheer them on. Then we just discuss the everyday life, it's that kind of a moment. Sometimes when it's really hectic, we're just quiet, then you don't need anything. (Interview round 1, mother of two.)*

Thus, we see that car-parenting represented intensive parenting ideology in many respects. Children were constructed as current and future projects and objects of social investment (Faircloth, 2014) that demanded a specific form of (mobility) work from parents (Gilow, 2020). Chauffeuring was not an isolated practice but part of a broader parenting 'strategy' (Furedi, 2002; Lee et al., 2014) that parents were performing to achieve the 'right' socio-spatial organisation of childhood. Parents accounts also reflected a degree of parental determinism and similar ideals about childhood – if they would not perform their chauffeuring role accordingly, children might end up on sub-optimal life trajectories (Furedi, 2002; Lee et al., 2014).

Chapter 5

Key themes	Example terms and expressions	N-associated terms in data	N-participants mentioning
Descriptions of everyday life (managed by parents and cars)	*'Stressful'; 'hectic'; 'speedy'; 'demanding'; '[chauffeuring as] work'*	36	21
Chauffeuring as mobility work	*'Organised'; 'streamlined'; 'concentrated'; 'cannot get distracted'; 'demanding' '[no] slackening'; '[no] hick-ups'*	26	19
Chauffeuring as social investment and parenting strategy	*'Invest', 'stake', 'pay off'; 'be worth it'; 'in the future'; 'later in life'*	23	17
Cultivation and enrichment in organised activities	*'Work towards a goal'; 'stay committed'; 'social skills'; 'learning'; 'success'; 'work'; 'work life'; 'get along [in life]'*	37	20
Managing the 'appropriate' socio-spatial organisation of childhood	*'Be around good people'; 'off the streets'; '[not to] loiter around'; 'not do anything'; 'let the Playstation raise my child'*	19	16
'Doing family' and emotional resourcing in the car	*'Connect'; 'catch up'; 'ask how they are doing'; 'talk'; 'listen'; 'cheer them on'; 'support'*	24	18

Table running down the left side: Car-parenting as a representation of intensive parenting

Table 4. Car-parenting as a representation of intensive parenting in the first-round interview data (author).

5.1.1 Meaning of the local community

During the project it occurred that parents and children crossed paths on a regular basis in a range of organised activities, lived in the same middle-class neighbourhoods and attended the same schools. This loose local community of families was a highly meaningful childrearing resource for the parents. They appreciated that their children made friends in the activities with other 'like-minded' children and built relationships with various 'competent', 'skilled' and 'safe' adults, who were parents to other children in the community or were otherwise involved in the activities:

…they [children] get different role models in addition to us parents and teachers. I mean in the community there is all kinds of instructors and coaches and staff and others, and I think it's good that they are there. It's like the whole 'village' is bringing up the kids. There are people around who are interested in the child, her development and general well-being. (Interview round 1, mother of three.)

Furthermore, the community was an important reference point for parents when navigating parenting strategies. Many referred to the regular encounters 'on the side of the pitch' and continuous messaging with other parents in social media groups. Some had made close friends with other parents in the community and would keep in touch also outside of the children's activities. Even though not all parents were close with each other, they described 'a mutual understanding' on parenting ideals and priorities: they had similar life rhythms, had done similar choices as parents, valued children's participation in activities in similar ways and faced similar struggles. This sense of community was apparent for example when parents described how they helped each other with chauffeuring:

> *It's very practical, whoever can do it, does it [chauffeuring]. You take them there, we pick them up. There is no need to make a big deal about it, that's how it goes around, in good spirit. And there is of course also people that we don't see eye-to-eye, but especially with the two oldest sons' teams we've become acquainted with the people and everyone shares the same feelings in the community. Everyone has similar practical difficulties, and we help each other out when needed to. (Interview round 1, father of three.)*

Many parents also referred to themselves (often on a humoristic note) as 'hockey parents', 'soccer moms', 'sporty families' or 'club people'. They explained their lifestyle through cultural memes (e.g., what a soccer mom's car looks like) and described how they joked about the 'chauffeuring lifestyle' amongst themselves:

> *When the season [in children's activities] is on, the housework is left undone, you really notice that we spend so much time at the sports halls. Someone was just making a laugh about 'how do you know that the season is over?' – You see people [other parents] doing housework and gardening [laughs]. They finally have some time to spend at home! (Interview round 1, mother of two.)*

These insights show how the community validated the 'appropriateness' of their lifestyle and parenting ideals as they recognised similarities in each other's lives. Some of the parents also explicitly emphasized that their parenting strategy was distinct from other people they knew: 'not everyone could do it' and not all parents 'understood the benefits of the investment' of the chauffeuring lifestyle:

> *It's really hectic and a good friend of mine just asked why we've chosen to put so much time on our children's activities. I mean you have to think of it as a hobby for us parents also. Otherwise, it's quite difficult to tolerate that all evenings are spent chauffeuring the children. (Interview 1, mother of two.)*

Chapter 5

As discussed in earlier studies on local parenting cultures, the community generated shared notions of 'how we do things' and what kind of parenting is appropriate for 'people like us' (Vincent et al., 2017; Vincent & Maxwell, 2016). Barker (2011) has stressed that local parenting cultures inform ideologies of mobility and that helping each other to manage mobility work can be an important part of their appropriation.

The normativity of car-parenting was further explained by three interviewees, who stated that the dominant parenting and mobility logic also worked against enabling children's autonomous mobility. They hesitated to support children's freedom of movement because of other parents' opinions:

> *I think my son was on the first or second grade when we let him cycle around with friends, and I was thinking if I was going to receive a child protection notice [laughs]. When they were cycling to the football pitch, three of them, I was thinking if that was OK. I was sure that he would manage but I was worried what other parents would think. (Interview round 1, mother of two.)*

Because of the hegemonic and normative representation of car-parenting, enabling children's autonomy beyond certain 'normal' limits made their parenting look 'different' or even 'weird' at times. It should not be pushed over certain thresholds or otherwise they would 'stand out'. Individual parents had little leeway to challenge the pervasive representation of children's mobility and the underpinning intensive parenting logic. As Barker (2011) put it, prioritising certain actions and interactions evidently means constraining others in local parenting cultures.

Crucially, the above analysis of the community social relations explains how the collective appropriation of car-parenting made it hegemonic and normative despite its widely recognised ambivalences. As Freudendal-Pedersen (2009) has argued, mobility narratives and representations can provide people with collective reassurance that 'we are doing the right things' even though mobility practices often entail trade-offs, compromises and value conflicts. Parenting practices can be especially prone to self-doubt, second-guessing and uncertainty (Lee et al., 2014), which arguably further highlights the meaning of mobility representations to parents 'ontological security' (Freudendal-Pedersen et al., 2010, 28). Our findings provide novel insight on how shared mobility representations can help parents cope with the pressures and ambivalences of intensive parenting.

Key themes	Example terms and expressions	N-associated terms in data	N-participants mentioning
Sense of community among children and adults	*'Like-minded'; 'spirit'; 'community'; 'mutual understanding'*	22	17
(Humoristic) references to shared lifestyle	*'Soccermom'; 'club people'; 'hockey family'; 'sports people'*	17	13
Distinction from other parenting styles	*'Not everyone can do it'; 'they [other parents] don't understand'; 'it's hard to explain to someone else'*	16	12
Negative responses to enabling children's autonomous mobility	*'Irresponsible [parents]'; 'shaming'; 'weird'; 'stand out'*	7	3

Table 5 Meaning of the local community in validating car-parenting in the first-round interview data (author).

5.2 Children 'becoming mobile' – parents constructing velonomy

After four months of mobility experiments, we saw that they had indeed managed to create a shift (at least temporarily) in children's mobility practices. Parents reported that all children who took part in the experiments and also some of their siblings had adopted cycling at least on some journeys that were previously done by car. Subsequently, all parents reported that their weekly time spent on chauffeuring had decreased at least to some degree. 18 parents out of 24 described that the change was 'significant', meaning that they had dropped multiple chauffeuring duties a week.

However, in the post-experiment interviews parents were not describing a mere mode shift on children's journeys to the organised activities, but a comprehensive change in children's overall travel patterns. For most children the constellations of their everyday journeys had changed altogether as cycling had become 'a thing' in the community. Parents attested that children were 'seeing new possibilities' in everyday life and 'thinking differently' about what kinds of destinations (friends places, recreational facilities, natural sites etc.) they could reach on their own. Also, as children were not obliged to go directly home after the activities in the car, they had the opportunity to 'hang out' or plan self-organised activities. This rendered the whole notion of 'a journey' ambiguous:

He [my son] has become a lot more mobile, he might just go for example to the trampoline park [self-organised activity] very spontaneously, just book a time there with friends and go by bike. It used to be that automatically the first thing was to check if he could get a ride, but this has changed a lot. Also, for example frisbee golf, he does that quite a bit now all around the city, and he showed me the other day on his mobile app that he'd done 40 kilometres of cycling a day just by going to the ice

rink [organised activity] and then to a frisbee golf course [self-organised activity].
(Interview round 2, mother of two.)

As the above quote implies, travelling longer distances, chaining trips and activities in new ways and cycling around without a specific purpose was phrased as a process of 'becoming mobile'. Even though children's autonomous mobility has been widely studied, minimal research has been dedicated to how it emerges – how children 'become mobile' across socio-spatial contexts (cf. Kullman, 2010). In the following we explain this from the parenting perspective by describing how parents constructed childhood velonomy as a positive mobility representation that contrasted with their initial normative representation of car-parenting when the project provided the community an opportunity to reshape their 'mutual understanding' on parenting, mobility and childhood.

Firstly, the parents explained how cycling promoted children's autonomy and agency in a positive way. Emphasising the distinction from car-parenting, a father reflected how this new reasoning had eroded chauffeuring in the community:

> *The thing is that parents have realised that their children actually like this [autonomous mobility] and can do things if they are provided the opportunity. I mean, it's that kind of people who don't calculate their gasoline expenses, that's not the thing. The thing is that the [children's] dependency [on parents] has changed. The umbilical cord is extending, so to say. And subsequently, it becomes the activity of the child, not so much the parent's thing. (Interview round 2, father of three.)*

The parents highlighted that children's autonomous mobility includes many other elements than simply transporting themselves to a given destination. The rather mundane ancillary tasks as making sure to leave home on time, managing equipment and organising the shared journeys with friends were deemed important constituents of agency because through these practices children were 'actively making the decisions to participate in different activities'. By taking over this bundle of tasks and practices that the parents saw as the burden of domestic mobility work, the children were balancing their novel freedom of movement with responsibility. Parents appreciated that this 'responsible autonomy' was subsequently transformed into positive emotions as 'pride' and 'dignity':

> *It's a kind of freedom and emancipation. There's this responsibility to remember at what time you have to be there, but at the same time you're not dependent on your parents chauffeuring anymore, it's a small step towards independence. So she [my daughter] has been totally exited and experienced this sort of pride that she takes re-*

sponsibility and manages it. I see from her appearance that this has been important for her. Now she has the ball to herself and she's happy to carry it. (Interview round 2, father of two.)

Earlier studies have argued that children are highly conscious that displaying responsibility is crucial when negotiating freedoms (Nansen et al., 2015; Wales et al., 2020). Yet, as Kullman (2010) has noted, such 'responsible autonomy' is not negotiated only between people but also between objects and spaces. In this respect it was interesting how the parents' construction of velonomy also concerned children's responsibility and autonomy regarding the use, maintenance and repair of their bicycles:

I think it was key that it all started with the repair workshops and changing the winter tyres together. It's important to get that feeling that you are well acquainted with the bike and you can manage it. (Focus group, mother of three.)

Repair and maintenance have been considered key constituents of velonomy in earlier studies analysing how communities can transform relationships of people, bicycles and spaces (Abord de Chatillon, 2022; Rigal; 2022). Some parents clearly appreciated these material aspects of autonomy and that cycling practices are always underpinned by the bicycle-cyclist relationship.

Second, velonomy was constructed respective to children's new interactions and relationships among peers. Parents described how new friendships and 'communal spirit' had developed through shared cycling practices and how they also extended to various leisure activities:

He [my son] is a bit of a lonely wolf, there's just one or two pals he hangs out with. He likes spending time alone, but I think now he likes cycling together with friends to the training sessions and then go play with them afterwards. (Interview round 2, father of two.)

In the study of Pacilli et al. (2013) lower independent mobility predicted greater feelings of loneliness, weaker sense of community, a lower sense of safety and less frequent social activities with friends. Similarly, qualitative studies have discussed how companionship pervades children's autonomous mobility and how children 'do friendships' by walking and cycling together (respective to 'doing family' in the car) (Christensen & Mikkelsen, 2009; Horton et al., 2014; McIlvenny, 2015; Nansen et al., 2015). Even without being physically present in these social encounters among children, the parents recognised the meaning of cycling as a social space and how it contrasted with the social space of the adult-dominated car.

Chapter 5

Thirdly, parents described how novel autonomy and sociality together generated a collective process of 'growth' and 'enrichment' among the children. Here, velonomy was constructed by pointing to the various skills and assets children were developing through new mobility practices. Some explained how this non-formal learning process was possible only through affective and embodied cycling practices with friends and without adults:

> *If you have a feeling that your mom and dad manage your activities at all levels, it limits the growth. And as I explained to you earlier, that growth happened as he [my son] saw others do it [cycling] and went along. I mean I can't get it across to him by teaching or speaking, he needs to experience and feel those sensations himself with friends. (Interview round 2, father of two.)*

Growth was described for example in terms of being able to 'take initiative', being 'responsible' and having 'new awareness' on 'how things work'. The fact that adults were not physically present to manage, control and optimise children's interactions and experiences freed space for different forms of being and learning:

> *I think that often in contemporary parenting we forget that it's important for children to feel good and competent in something, to get the experience that you manage by yourself. We pave the way for them too much, try to soften up everything and make it easy, and that is not necessarily motivating and nice for the child. They'll miss out on all the challenges and disappointments, but they'll also miss out on the moments of success: that I can, and I manage by myself. I think it's the contemporary culture, that you do everything for the child, nothing should be difficult and then you'll make them miss out on those different kinds of experiences. I think this project has shown that we are all a bit of curling parents. (Focus group, mother of two.)*

In sum, velonomy as a process of 'growth' through 'becoming mobile' was considered an open-ended process that is not contained to formal learning environments, but encompassed by free-flowing engagements with people, objects and spaces as described in earlier studies on children's mobility (Horton & Kraftl, 2006; Kullman, 2010; Nansen et al., 2015; Wales et al., 2020). Importantly, the parents' accounts highlight the paradox how these mundane engagements might seem less than spectacular, but still be deeply meaningful for children and their parents. As Horton et al. (2014, 99) put it, autonomous mobility 'may simultaneously be described as intense, loved, vivid, vital, playful, social experiences, which are central to friendships yet also dismissed with a shrug as taken-for-granted, ordinary and underwhelming' (emphasis original).

5.2.1 Velonomy challenging the intensive parenting logic?

The critical question remains, how velonomy as a locally emerging representation of children's mobility was reproducing or challenging the intensive parenting discourse. As implied in the last quote, many parents explicitly contrasted enabling children's autonomous mobility with contemporary 'curling parenting' and 'helicopter parenting'. This contrast was also articulated through new priorities like 'not stressing', 'letting go' and 'giving responsibility'. The 'good' parent's role was now to stay more 'on the background':

> I don't know if you can call it learning, but I think, regarding their autonomy, that I've learned to trust a bit more that kids can take care of their stuff. And trust that things happen even if I draw myself on the background. It's more like 'I am on the background, but I am here if you need me'. (Interview round 2, mother of two.)

However, even though parenting ideals, roles and practices were renegotiated during the project, we do not wish to uncritically repeat the parents' account that the appropriation of velonomy meant a shift away from the intensive parenting logic. We justify this critical stance in the following by drawing attention to what important aspects of children's autonomous mobility were left without attention in the community.

There were minimal comments on the playful character of children's autonomous mobility and cycling even though this has been considered central in earlier studies (Horton et al., 2014; McIlvenny, 2015; Wales et al., 2020). Ross (2007) has discussed how autonomous mobility provides children not only social encounters and excitement but also stress-free time for solitude and daydreaming outside adult-dominated settings, which none of the parents considered. Also, there were no remarks on how children develop emplaced knowledge and social awareness on familiar and unfamiliar environments and settings through embodied and social engagements (Christensen, 2003; Milne, 2009; Ross, 2007). 'Becoming mobile' was rather deemed to accrue children's functional and spatial knowledge on distances and travel times.

By conceptualising emplaced knowledge as distinct from spatial knowledge, Christensen (2003) has discussed how children's understanding of themselves is shaped by their connectedness to space and place and how this understanding broadens through mobility. In line with her findings, our study evokes the critical insight that adults tend to be more interested in the 'forms of knowledge that they believed the children would come to need rather than the knowledge that children were developing through their emplaced being' (ibid., 15). On a similar vein Horton & Kraftl (2006) have argued that framing all children's experiences as processes of 'growing up' creates an unrealistic image of their continuous linear 'becoming' and considers them as future

Chapter 5

development projects. The absence of the seemingly 'unproductive' but meaningful aspects of autonomous mobility as 'just cycling' (as a counterpart for 'just walking' in Horton et al., 2014), 'emplacement' and playfulness suggest that velonomy was still influenced by the intensive parenting discourse emphasising constant enrichment, resourcing and cultivation. The notion of 'growth' was clearly akin to future-oriented assets and skills that children were posited to develop in the organised activities. Even though the parents considered car-parenting and velonomy as contrasting parenting strategies, the future- and productivity-oriented notion of children as social investments still provided a pertinent set of criteria, against which the value of mobility was assessed.

Thus, rather than a shift away from intensive parenting ideology, velonomy was more of a locally emerging appropriation of new mobility representations and practices in the intensive parenting discourse that emerged to co-exist in an ambivalent relationship with intensive car-parenting. As Hoffman (2010) notes, the ability of any given initiative to dissemble prevalent parenting discourse should not be overestimated as parents may only find new ways to give meaning to different strategies and practices to embed them in the intensive parenting logic. In Fairclough's (2003; 2013) terms, new social and material practices can simply be recontextualised in the prevalent discourse. Hence, aligning ourselves with Joelsson (2019) we consider childhood velonomy as a representation of 'enabling but engaged parenting', that was still negotiated respective to the intensive parenting discourse.

	Key themes	Example terms and expressions	N-associated terms in data	N-participants mentioning
Childhood velonomy as a representation of enabling (but engaged) parenting	Children's mobility as free flowing movement beyond 'journeys'	*'[Cycling as] a thing'; 'hang out'; 'spontaneous'; 'flexible'; 'have fun'*	38	19
	Children 'becoming mobile'	*'See new possibilities'; 'think differently'; 'new places'; 'make plans'; '[less] dependency'*	40	19
	'Responsible autonomy' as a positive experience	*'Pride'; 'dignity'; 'ownership'; 'emancipation'; 'freedom'; 'independence'; 'responsibility'*	28	18
	Children's autonomous cycling as 'growth' and 'enrichment'	*'Learning'; 'independence'; 'skills'; 'responsible'; 'awake'; 'take initiative'; '[better] self-esteem'*	38	18
	New parenting priorities	*'Let go'; '[not] to stress'; '[not] to control'; 'enable'; 'give responsibility'; 'empower'; '[parents] on the background'*	33	22

Table 6. Childhood velonomy as a representation of enabling but engaged parenting in the second-round interview, workshop and focus group data (author).

Despite these critical conclusions we refuse to undermine the social change that took place through shifting representations. Car-parenting and velonomy concerned not only the differences between parental chauffeuring and autonomous cycling as mobility practices but entailed also a more general change on how children's mobility was given meaning: what is it, how it should be performed and what it is for. These notions were enacted as ways of interacting among children and adults, inculcated in parenting roles and identities and physically materialised in cars and bicycles abilities to create social spaces (Fairclough, 2013).

	Car-parenting (as a representation of intensive parenting)	Childhood velonomy (as a representation of enabling but engaged parenting)
Generalised representations of mobility	Mobility as predefined *journeys* according to pre-defined (hectic) schedules	Mobility as spontaneous and reactive *movement* according to children's self-defined needs
	(Auto)mobility as a means for parents to manage the fractured family life (work, school, organised activities)	(Velo)mobility as a means for children to manage their everyday life
	(Auto)mobility facilitating participation into organised activities	(Velo)mobility being a part of the organised activities
	Mobility as work for parents (agency of parents)	Mobility as a social event for children (agency of children)
	Mobility (work) as investment – an instrumental practice for children's enrichment and cultivation	Mobility as an intrinsic constituent of enrichment and cultivation
	(Auto)mobility enabling 'effective' coordination of the socio-spatial organisation of childhood	(Velo)mobility enabling autonomous and 'idle' coordination of the socio-spatial organisation of childhood
Operationalisation of mobility representations in interactions, roles and materialities among children and adults	Parents' duty to invest in children through chauffeuring	Parents' duty to support children's autonomy through enabling mobility
	Parents defining the appropriate socio-spatial organisation of children's lives	Parents and children mutually defining the appropriate socio-spatial organisation of children's lives
	Parents' role to 'pave the way' for children (with automobility)	Parents' role to let children experience (through autonomous mobility)
	Parents responsibility to provide children with meaningful social relationships through organised activities	Children's ability to create meaningful social relationships for themselves
	Car as an exclusive care space for parenting – chauffeuring as 'doing family'	Cycling as an exclusive social space for children's peer relations – cycling as 'doing friendships'
	Parents managing the social-material space of the family car	Children supported to manage the social-material spaces created through bicycles and cycling equipment

Table 7 Generalised representations of mobility and their operationalisation in interactions among children and adults (author).

6 Conclusions

Creswell (2010) has argued that to explain mobility patterns, research must analyse the interplay between mobility representations and lived and embodied mobility practices. Following this line of thought and by applying insights from parenting culture studies to mobility studies, we have attempted a novel way to analyse the changes in children's mobility patterns that have taken place in recent decades (Shaw et al., 2015; Fyhri et al., 2011). The paper shows how parents' representations of children's mobility are shaped by the intensive parenting discourse, but also negotiated locally in more or less loose adult-child communities and shared experiences within them.

Promoting children's autonomous mobility does not demand changing the profound beliefs, values and aspirations of contemporary parenting culture. Rather the benefits of the freedom of movement must be appropriated in the locally emerging set of valuations, beliefs and ideals about 'good' parenting, mobility and childhood. Our study was conducted in a spatial context where urban risks are not highly prevalent and a middle-class social context where children's cultivation through organised activities is an important parenting ideal. With these socio-spatial parameters, the study sets an example on how local communities create powerful narratives and representations about mobility and how they can be analysed and even disrupted to change mobility patterns.

The operationalisation of velonomy as a counterpart of car-parenting helps us to understand how the process of 'becoming mobile' is linked to notions of 'growing up' in parents' perspective. Crucially, the term is apt to render visible how these processes take place in an adaptive web of people, materials and spaces that are 'all contributing to a simultaneous sense of trust and playfulness that invites families to resolve the ambiguities of growing up in situated ways' (Kullman, 2010, 830). Yet, in contrast with this rather positive notion we have also pointed to the inconsistencies and ambivalences of parents' representations of children's mobility. Some aspects of 'becoming mobile' were more meaningful for parents than others, which revealed the tendency towards the intensive parenting logic.

By focusing on parenting we do not wish to undermine children's own accounts. To the contrary, we hope that we have managed to highlight how children's affective, embodied and social agency can prompt renegotiations on what mobilities are deemed 'appropriate' across communities and places. Yet, at the same time, we have wanted to emphasise that parenting culture is not a mere lens on children's mobility but matters a great deal also to parents' wellbeing. By disrupting ambivalent mobility aspirations and valuations through experimental and participatory research designs, studies can open discursive and transitional spaces in adult-child communities and provide new leeway in (re)negotiating what kinds of mobilities are possible and desirable.

Chapter 6

Assembling Velomobile Commons for Children and Young People in a Marginalised Amsterdam Neighbourhood[36]

Abstract

The polymorphous sustainability crisis demands large scale transitions in urban mobility. In many places a lot of expectation is put on urban cycling. Yet, current scholarship has pointed that cycling transitions tend to cater to the affluent, native, white and in other ways privileged urban areas and people. Mobility researchers have proposed mobility commoning as a key theoretical resource to account for the social justice of mobility transitions, but its practical operationalisations remain scarce. This paper focuses on cycling promotion efforts among an intersectional marginalized group that has received little attention in this research and policy context: lower-class, racialized youths in urban peripheries. I deployed theoretical understandings from recent mobility justice/commoning literatures to create an action research study on Amsterdam cycling program's efforts to promote cycling among youths in the historically marginalised neighborhood of Bijlmer. The study highlights how even an advanced system of velomobility, such as the Dutch, might be underpinned by intersectional mobility injustices, and how both, immature and advanced cycling cities should engage with local communities and diverse groups to assemble velomobile commons.

Introduction

> *What we really need is knowledge on what works. What are those activities that get especially these Black lower-class kids on bikes... So, if your study can provide some insights on that then I am happy to help you. But you know it's quite complicated.*

Amsterdam is a renowned cycling city, but as the quote from a coordinator of the city's bicycle program implies, there are important injustices of young people's velomobility. Correspondingly, a notable part of the program initiatives and activities target exclusively youth and families in multicultural and disadvantaged parts of the city. Yet, 'it's quite complicated' – researchers, policymakers and practitioners across the globe have found very little universal guidelines to promote pedalling for disadvantaged populations.

More implicitly, the quote also implies that the 'effectiveness' of policies and programs for mobility transitions ('what works') is contingent with different dimensions of social justice. Mimi Sheller (2018) sheds light on these issues in her seminal work, by arguing that we should not expect wide ranging mobility transitions if we cannot simultaneously tackle the intersectional, socio-spatially produced, multi-scalar and historically contingent social injustices. A large part of recent transport and mobility research has explained how mobility governance regimes produce unequal capabilities for different subjectivities, but as put in a recent special issue 'only a handful of articles move beyond what we call a 'reformist' [not transformative] approach to question underlying structures and conventions' (Karner et al., 2023, 1; also, Schwanen & Verlighieri, 2020).

To address the need for transformative research, this paper discusses the potentials of promoting mobility justice through mobility commoning (Nikolaeva et al., 2019; Sheller, 2018). My study introduces a novel operationalization of the concept by examining how commoning is be pursued in collaboration among municipal government officials and local bicycle advocates and how these processes can be analysed and supported through participatory and action-oriented research. The study focuses on Amsterdam cycling program's initiatives to promote youth cycling in the historically neglected, stigmatized and multicultural neighborhood of Bijlmer in Amsterdam Southeast (Balkenhol, 2021; Pinkster et al 2020). I argue that even though collaborative mobility commoning between public cycling policy process and local cycling advocacy is a promising approach, it needs to be based on radically democratic deliberation, procedures and epistemics that accounts for local knowledge on how commons are assembled in the interactions of different material, spatial and socio-cultural elements.

Mobility commoning, governance and the civil society

Questions on the interconnections between mobility, social justice and transitions have recently evolved from transport equity to transport justice and again to mobility justice, gradually expanding the understanding how just mobility systems should be imagined and enacted (Verlighieri & Schwanen, 2020). Working across scales, geographies and a range of mobile phenomena Sheller (2018) has explained how mobilities reflect societal power relations and reproduce social injustices: how 'politics of mobility rest on the mobility of politics'. Starting with this notion of *kinopolitics*, she defines different contingent dimensions of mobility justice. In the field of urban mobility, her work remedies the often-voiced frustration that majority of transport policy and planning considers 'equity' or 'justice' a mere matter of distributive justice: an equal division of mobility opportunities and risks. Yet, Sheller goes on to criticise also the more elaborate conceptualisations based on 'access', capabilities and spatial justice (e.g. Martens, 2016; Pereira et al., 2017). She attests, that despite their merits, these works fail to account for urban spaces and subjectivities as constantly reproduced in and through mobilities, and to connect local and present-day injustices to multiple scales and historical forms of oppression and exploitation. Building on the relational ontologies of mobilities research, Sheller's project is about 'mobilising' the theories of justice to grasp how kinopolitical injustices are reproduced and changed.

Beyond the *distribution* of spaces, benefits and risks, mobility justice is, firstly, about *deliberation*. This entails the recognition of local and contextual knowledge, especially regarding the vulnerabilities of different groups. *Procedural justice* entails how this knowledge is accounted for and how different groups are included into governance processes. *Restorative justice* in turn demands that previous injustices and their current manifestations should be duly compensated. Finally, all these dimensions link back to *epistemic justice*, which means reconciling seemingly incommensurable ways of knowing, creating new ways of thinking about mobility and opening the discussion for fundamental epistemic and ontological questions (also Nixon & Schwanen, 2018).

Mobility justice is mainly used as a framework for analysing current injustices, but Sheller's project is also about providing theoretical resources for the normative dimension of mobilities research: the modelling of transitions towards alternative and socially just mobility cultures, systems, and governance processes (also Sheller, 2014). To this end, she introduces mobility commoning as the way forward. As kinopolitics is a process of emergent relationships through which unequal spatial conditions and subjects are made, commoning means reconfiguring those relationships:

…commoning mobility goes beyond the road infrastructure itself as a shared space. Instead, it implies a kind of social infrastructure for assembling, gathering, and sharing while on the move. I think of it more as a verb or an action than as a place through which people move (Sheller, 2020, 298).

While Sheller connects mobility commoning explicitly to intersectional social movements and community initiatives, Nikolaeva et. al. (2019) have in parallel defined it more from the governance perspective, as:

…forms of thinking about and organizing mobility that draw on the logics of commoning such as communal decision-making practices, openness to new forms of perceiving the right to mobility as well as the right to immobility (the right not to be displaced), the awareness of the social production of mobility and the power relations inherent in it, as well as the commitment to creating equity and working in the interest of the public good (ibid., 353).

These conceptualisations are very much complementary, if we focus on how commoning is pursued through collaboration between the public transport governance processes and local civic activity. As put by Cox (2021, 8) 'cities become spaces for cyclists… by a complex set of interactions between citizens and polity' and research is paying increasing attention on the potentials and pitfalls of this interplay. Many community initiatives are well equipped to turn their local knowledge on experiences into transformative initiatives (Enright, 2019; Schwanen & Nixon, 2020), but if their relationships with policymaking and planning are exploitative, colonising, under resourced or in other ways unbalanced, transformative ideas are often watered down (Spinney, 2010; Sagaris, et al., 2020). The eventual outcomes depend also on the identities and tactics of concerned civic initiatives: some try to get involved in the policy processes and others prefer applying pressure from the outside (Cox, 2023). Still, in broad terms for example Karner et al. (2020) have analysed a spectrum of approaches between 'state-centric' and 'society-centric' transport planning, and argued that transformative changes occur, when governance processes are fairly and innovatively paired with civic actors: 'contemporary "wins" typically involve novel combinations of state and society-centric strategies' that challenge 'planners to consider unfamiliar sources of knowledge and engage with communities in novel ways' (ibid., 452).

Taken together these literatures suggest that mobility injustices can be analysed and challenged by focusing on the reciprocal relations between 'the government' and 'the local'. I argue that these relations can also be considered the locus of mobility commoning. If we are pursuing a 'governance shift' and a radical reconsideration of how mobility is valued and performed (Nikolaeva et al., 2019), it is logical to

Chapter 6

assume that this requires some kind of 'a process of translation across difference' and 'a reconciliation of different ways of knowing' (Sheller, 2018). This type of social learning to change practices and discourses lie also at the heart of action-oriented and participatory social research, and in the following I explain my action research approach to study these processes.

## Methodological framework: action research, relationality and realism

Action research, often combining elements from evaluation research and policy analysis, is a methodological framework to study and change urban and regional policy and renegotiate the politics of transitions (Bartels, 2020; 2017; Bartels & Wittmayer, 2018; Richardson et al., 2018). This strand of research is based on the premise that socio-spatial processes are not linear, fixed and imposed, but evolve in collaborative negotiation and sensemaking among diverse actors (i.e. the causal relations in these processes are not linear but generative) (Massey, 2005). This socio-spatial becoming-ness is not a harmonical process but underpinned by contestations and power imbalances between actors, practices and structures (Fraser and Weninger, 2008), and this power laden 'politics of transitions' (Nikolaeva et al., 2019), is what action research studies seek to study and intervene as they subscribe to relational ontologies.

Yet, if relational ontologies are conflated into relativism, research is hardly able to explain how programs and policies can solve 'real' urban problems and it remains unclear how studies can generalize findings if case studies only 'work' in specific settings (Bartels, 2017). Secondly, large part of urban action research does not consider how theoretical ideas like mobility justice and commoning should drive participatory and action-oriented research processes and their logics of inference. After all, the theory/practice interrelation is where the power of action research lies since the inception of the paradigm (Lewin, 1946). Thirdly, even though critical research needs to steer clear from essentialist and implicitly authoritarian frameworks, it is necessary to assume some degree of normativity to be able to tell oppression from justice and ill-being from wellbeing. In other words, actively rejecting ethnocentrism, androcentrism and imperialism should not lead to defeatist cultural and judgmental relativism (Olson & Sayer, 2009; Sayer, 1993)[37]. To take these issues seriously, I advance Sheller's (2014) notion of *realist* relational ontology and, respectively, apply a realist-informed methodological toolkit in action research.

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37   For a profound discussion on ontological and epistemological positions between postmodernism and realism, that is, Deleuzians and critical realists see for example Rutzou (2017). This goes to say that for example Deleuzian concepts and insights on cycling (Waitt & Buchanan, 2023) are not incompatible with realist research.

Stemming from the philosophical branch of critical realism (Bhaskar, 2008), realist approaches to social research acknowledge the relational and non-linear emergence of social phenomena but posit *real* in-depth social mechanisms that can be studied through testing and refining theoretical understanding (e.g. mobility commoning) in iterative cycles (Ackroyd, 2009; Danermark et al., 2019; Sayer, 2000). Here, the capability to explain phenomena is dependent on the continuous juxtaposition of empirical evidence and conceptual ideas (Emmel, 2021). Realist action research and evaluation are interested in the deep lying social mechanisms because they determine how a program, policy or other intervention works out in a given context (Houston, 2010; Pawson & Tilley, 1997). In this study, the in-depth social mechanisms I have sought to tease out and intervene are the power-laden social processes that reproduce or challenge different dimensions of mobility justice (deliberation, procedures, epistemologies) in the interactions among municipal government officials and the local civic actors. In other words, the research process aimed to facilitate a translation and reconciliation exercise (Sheller, 2018) where the cycling policy process converges with the local knowledge and practice. Eventually, the aim is to arrive to 'a reconceptualization of the subject [the program] and how it works' (Ackroyd, 2009, 537), meaning a novel interpretation of the generative causal relations that the program builds upon.
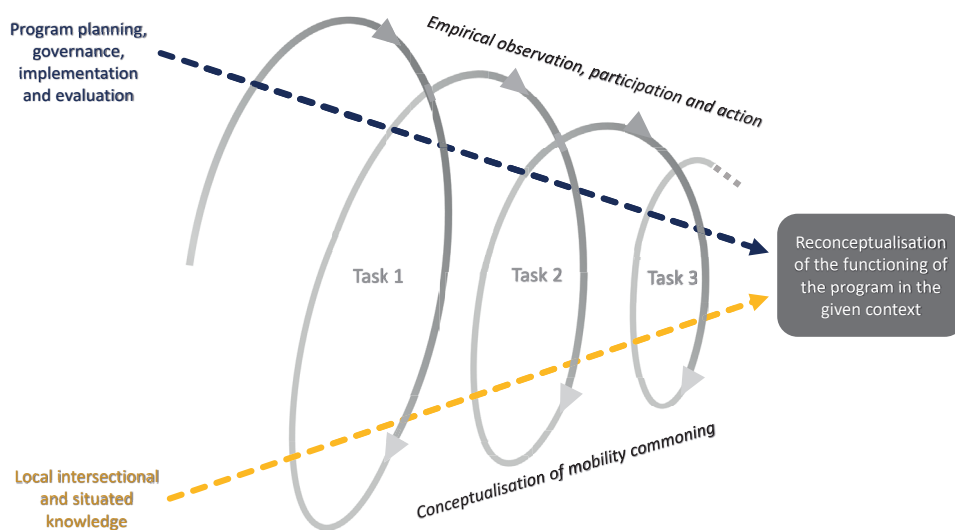
Figure 8 Realist action research design for mobility commoning (see Emmel, 2021; Houston, 2010). The research tasks are defined in Table 8.

Methods and materials

Realist research often starts by describing the so-called program theory (or policy theory or theory of change), meaning the participants' assumptions on what the program does (Emmel et al., 2018). This is based on the premise that policies and programs are in fact 'theories' themselves (Vaessen & Leeuw, 2011). Program theory concerns *why* the program is needed, *what* it actually contains and *how* it produces desired outcomes. In my analysis I combine these insights with theoretical understanding of mobility justice/commoning (see Table 8)[38]. Methodologically I combine critical discourse analysis (CDA) (Fairclough et al., 2004), realist evaluation (Emmel et al., 2018; Pawson & Tilley, 1997) and ethnographic work (Porter, 1993) in an action research setting that continually engages with the study participants to help them understand the relevant social dynamics in the specific context (Houston, 2010). My methodical plurality stems from the fact that it is important for realist explanation to note how 'people not only act and organize in particular ways, they also represent their ways of acting and organizing, and produce imaginary projections of new or alternative ways' (Fairclough et al., 2004, 2). As argued by Sandercock (2011) regarding change in multicultural cities, we should refrain from demarcating action and discourse when aiming for transformations. Thus, 'depending on the explanandum, it may be necessary or appropriate to supplement critical discourse analysis through more concrete-complex analyses of extra-discursive domains' (Fairclough et al., 2004, 23). Indeed, realist researchers often apply diverse methods and appropriate them for their own purposes (Reed, 2009).

The study focuses on the implementation of the Amsterdam cycling program in the Bijlmer housing estate in the Southeast part of the city. The program deliberately seeks to facilitate the collaboration among government officials and local people: 'residents', 'neighborhoods', 'districts' and other local stakeholders were often described as key collaborators (e.g. City of Amsterdam, 2016). From this outset I engaged with three different groups: *city representatives* connected to the bicycle program (policymakers, planners and civil servants); local *district representatives* from the Amsterdam Southeast district government; and *local bike advocates* meaning various NGO and community representatives doing bicycle promotion in the area from the youth perspective.

Firstly, I interviewed the participants and reviewed relevant policy documents, project plans, impact measurement tools and other knowledge resources that the participants saw relevant in their work. Secondly, I evaluated how the government officials and locals worked together to organize and manage their projects. Thirdly, throughout the project I conducted extensive field observation and participation. I took part in meetings, events and communication platforms (e.g. social media groups); helped the

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38   Realist researchers often call this empirical-theoretical work as the formulation of middle range theory (Boudon, 1991).

actors to create project contents and materials and worked physically in the projects in assistant roles. These different forms of participation provided critical insight on how different activities and projects were represented and implemented, enabled 'catching up' with the participants when I wanted to ask their opinions on certain events, and created trust, shared meanings and experiences. The three interrelated research tasks are outlined in Table 8.

	Program theory question	Key dimension of mobility justice / commoning	Focus of analysis	Methodological framework and data
Task 1	Why is the program valuable?	Recognitional/ Epistemic	Representations of youth cycling	Critical discourse analysis (Fairclough et al., 2004): Primary data: interviews (*city representatives, n=18; district representatives, n=8; local bike advocates, n=11*). Secondary data: policy documents, project materials and other knowledge resources.
Task 2	What needs to be done to achieve program objectives?	Procedural/ Epistemic	Concrete co-creative procedures	Realist evaluation (Pawson & Tilley, 1997): materials, memos, and resources from three local bicycle promotion projects assigned to local bike advocates
Task 3	How does the program work in the given context?	Epistemic	Knowledge creation and applications processes	Ethnographic fieldwork throughout the research project (Porter, 1993; Verloo, 2020): fieldnotes; research diary; research log.

Table 8 Outline of the research tasks (author).

Understanding the Amsterdam cycling program in the context of Bijlmer youths

In cities where the modal share of cycling is high, children and young people tend to be well-represented among cyclists (Goel, 2022). Broadly, this is also the case in Amsterdam, but this narrative is not equitably distributed. The city is increasingly polarized as people with non-native backgrounds and lower-class positions are concentrated in the peripheries (Boterman & van Gent, 2023). The uneven development is also reflected in mobility patterns. The focus of my study is the Bijlmer housing estate in Southeast Amsterdam (sometimes used as a shorthand for the whole Southeast borough) that is one of the districts with significantly lower cycling rates than other areas. It is heavily targeted by the municipal cycling program through different social projects, urban experiments, campaigning and other measures. Importantly, Bijlmer has arguably some of the most accessible bicycle lanes in the city (wide and well-separated from car-traffic), supporting the argument that equal distribution of cycling spaces is not enough to achieve mobility justice. We need to understand how

the socio-material infrastructures are locally assembled and how they serve to (re) produce spaces through contested representations and embodied practices.

As Sheller (2018) notes, these present day kinopolitics are influenced by historical forms of colonialism, neglect and segregation. Bijlmer was built in the 60s and 70s as the functionalist 'city of tomorrow', but the middle-class populations that it was planned for, only partly found their way to this 'modernist haven'. Due to competition of detached low-rise areas elsewhere, late development of the metro line, specific housing allocation policies and other issues, the area quite quickly catered to relatively poor households (Aalbers 2011; Wassenberg 2011). The independence of Dutch colony Surinam (1975) coincided with a large influx of migrants who could find available housing in the newly built area. Their arrival left a significant mark on the reputation of Bijlmer as a relatively multicultural, but also distinctly Black area (Van Gent & Jaffe, 2017). In the course of 1980s and 1990s the area further diversified and due to poor maintenance and significant social problems became known in public discourse as the city's 'most notorious neighborhood' and the 'Dutch ghetto' (Balkenhol, 2021; Pinkster et al 2020).

Today only around 25% of the population of the whole Southeast borough has a native Dutch background. The largest ethnic groups are Surinamese (26%), African (16%) and Antillean (10%), making the composition overall very diverse (Onderzoek & Statistiek Amsterdam 2022). 74,7% of all children and young people (0-17-year-olds) are first- or second-generation migrants. Young age groups are currently very well represented in the area and the trend is likely to continue along with the upcoming housing plans.

Bijlmer has been and remains subject to strong urban renewal policies (Van Gent 2010; Aalbers, 2011) and children and young people's wellbeing, 'positive development' and 'opportunities' are a central part of the policies and programs targeting the district (e.g. Masterplan Zuidoost, 2020). As far as the trajectories of multicultural segregated areas within processes of 'boom or bust' and 'revitalisation or depression' are symbolically structured around the youngest inhabitants (Cairns, 2018), the arguments below should be understood respective to this political economic context and imaginations regarding the 'becoming' of the area as a place for young people.

Representations of youth cycling

Amsterdam cycling program aims that pedalling becomes an integral part of the 'daily existence of every Amsterdammer' (City of Amsterdam, 2016, 71). In addition to

promoting healthy lifestyles, enhancing the livability of urban spaces and mitigating emissions, cycling is supposed to 'create vibrant and social interaction', 'contribute to social cohesion and identity' and 'help reduce transport deficiency' (ibid., 84). The study started by investigating how the different bicycle program stakeholders understood these types of phenomena and constructed representations of young people's cycling, especially in terms of why it should be promoted and how it emerges. I argue that there were important differences in city representative's and the local's (district representatives and local bike advocates) accounts: the former constructed cycling predominantly as a form of 'active citizenship' and the latter as an 'integrative social space'. Below I analyse their inherent notions of young people's urban citizenship and wellbeing.

Representing cycling as active citizenship

With most city representatives, the interviews started by them explaining how young people's participation to the cycling city would 'broaden their world views', 'expand their consciousness' and provide 'new opportunities'. Cycling was constructed as a means for the young people to benefit from the affordances of the city and to become socialized in the surrounding society:

> I mean these kids are 13 - they don't need their parents to manage their lives. It's not good for their health and development. They need to move more [for physical health], participate more and learn how to commute to work later on. Their world needs to be broader, you know. So internships, schools, also sports, but just being able to get to places would be a great thing in a lot of people's lives. (City representative, female, Dutch background.)

In the case of Bijlmer, autonomous physical mobility was also deemed to be a great way for the local youths to 'break out of their territory' for productive social interaction, education, leisure and employment:

> There is a lot of problems in that area, overweight, health issues, social issues, crime.… But we have a comprehensive system for the bikes for them to move and discover things outside of that reality. (City representative, male, Dutch background.)

Thus 'activeness' simultaneously encompassed participation in the surrounding society and healthy lifestyles and physical activity, which many highlighted as a major policy concern in Bijlmer. As all Amsterdammers have more or less equal access to bicycle lanes (distributive justice), it was deemed relatively easy for the Bijlmer youths to take care of their health and wellbeing through pedalling. Yet, some of the city representa-

tives also questioned the organizational culture of the bicycle program and argued that the 'cycling gospel' should be viewed critically:

> *I see myself as an outsider, because I have only worked here for a year now. And people in this division are quite, you know, left wing and think that everybody is so convinced that cycling is what we should do. Sometimes they can't put themselves in the shoes of someone who has other thoughts about this. And I think this is really necessary to solve certain problems. If you can't get into these minds you can't really get the over the bridge. (City representative, female, Dutch background.)*

The representation of cycling as 'active citizenship' recognizes that even though young people are 'not-yet-citizens' in terms of their legal status, urban citizenship is performed through mobility because it relates mobile subjects to each other and hegemonic governance regimes (Aldred, 2010; Castañeda, 2020). However, I argue that these accounts do *not* recognize that these performances are not happening in a social vacuum but entail 'an ongoing relational negotiation of identity and difference, where the resources required for success are unevenly distributed' (Spinney et al., 2015, 326, also Green et al., 2012).

Reynolds' (2013) has explained why Black neighborhoods are, simultaneously, sources of positive support and negative constraint for local youths. Socio-spatial identities regulate where different youths experience belonging, and while their 'home' territories are important spaces of wellbeing, many 'get stuck' and are unable to 'get on' and venture new possibilities outside of them (as the notion of 'breaking out of the neighborhood' assumes). In addition to this spatial territorialization, cycling also demands subjective appropriation and territorialisation as an embodied *practice* (Aldred, 2023; Waitt et al., 2021; Waitt et al., 2023). Studies have indeed discussed the socio-cultural association of cycling with whiteness and middle-classness (Boterman, 2020; Golub et al., 2016; Osei & Aldred, 2023), meaning that for non-native, lower class people of color 'becoming cyclist' means to be able to negotiate, appropriate or overcome these social markers. In other words, different modes of mobility are differentially available to different youths because of intertwined spatial, material, social and cultural reasons (Skelton, 2013).

On a critical regard against these insights the representation of youth cycling as active citizenship, is based on a notion of an unconstrained and atomized individual that can be responsibilised to take care of herself and the city. It is problematic from the recognitional justice viewpoint if mobility governance fails to account for the embodied, intersectional and territorial kinopolitics that deny such free, universal

disembodied mobile subjectivities that can easily 'break out' of their socio-spatial territories (Sheller, 2018).

Some locals explicitly criticised the reductiveness of one-dimensional psycho-physical valuations and rationalities of cycling promotion, that assume that families and youths will start cycling if they are simply made aware of its benefits. One of the district representatives explained through a metaphor how this trumped alternative ways of organizing local bike promotion activities:

> *There are all these educated high-status people coming to the poor neighbourhoods saying that 'you should buy yourself a broccoli'. But they have other things in their minds, than buying a broccoli. It's more like 'how do I get my kids some breakfast this morning?' So, I think we should change the narrative of cycling promotion: more like 'what is in it for me', what is in it for the children? (District representative, Indo-Surinamese background.)*

Representing cycling as integrative social space

Respectively, the local stakeholders were more concerned on how youth cycling could promote a sense of belonging, capability and wellbeing *in* Bijlmer rather than *outside* of it. One of the local bike advocates explained how his activism was driven by his own childhood memories associated with social control and Black immigrant identity:

> *I would pedal from courtyard to the next to check on everybody. And when you know what's up, you don't get misunderstandings and trouble. But you know it was also a cultural thing because with my Caribbean friends we realised the power of the bike, like 'in Curacao they do this and that with the bike, and we should do it here too'. So we would always connect because we would always be on the BMX and things like that. And there was also new people coming from the islands and being like 'where are the bikes!?'. And that's when I realised that #bikelife, that's real and that biking can be a form of expression [see next section on #bikelife]. (Local bike advocate, male, Antillean background.)*

These social dynamics to build local community, belongingness and place were not limited to cycling-as-transport but considered also the social spaces created through playful riding and bike fixing initiatives, as explained by another local bike advocate:

> *I had classes of around 30 kids sometimes and out of those couple hundred kids now a couple dozen can fix their bikes, so I'm satisfied. But you know fixing, racing, biking it's all more of a way to build communities, like you need a village to raise a child. You get some social control, if we just have a space then we can gather the*

kids and start doing stuff. And it happens automatically, you learn whose children they are and be like 'hey you look like her, is that your sister?' (Local bike advocate, Surinamese background.)

On a similar note, a district representative facilitating bicycle projects from a social work perspective described how non-Dutch and non-white identity had to be negotiated in order to become mobile with a bike:

These kids they are all asking 'who am I?' Am I Dutch, Caribbean or something else, and I mean it's with everything they do. So, if we can facilitate that process by offering them cultural opportunities to see themselves on a bike, that can make a big difference. (District representative, male, Antillean background.)

Whereas the representation of active citizenship focused on individual agency and benefits, these types of local accounts on social control, belongingness and communal identity building constructed the interconnections of cycling citizenship and wellbeing in more relational terms. Cycling was considered a great way to nurture a sense of belonging but could only be achieved through cycling assemblages that felt 'somehow right' (Schwanen & Nixon, 2020, 92). Here, the need to account for the intersectional territorialization of cycling was not limited to ethical and class background but also gender:

Author: So how is riding a bike different for girls in here [Bijlmer]?

Local bike advocate (Dutch background): Well, you know social safety is not only about someone attacking you physically. They are 15-year-old girls, despite their skin color they are always suspicious on what other people think. In these communities there are a lot of 'non-Dutch' social rules…

District representative (Dutch-Surinamese background): …and they have a lot of pressure from home, work, school, and in all these instances they need to assess not only how they perform but also how others see their performances. Many parents are single and have multiple jobs, so often the girls also have a lot of duties at home. And when I think of this and see two girls on a bike just gossiping and laughing, I think that can be almost like a therapeutic experience. They are there without any restrictions or suppositions, just free.

The key is that even though the local participants of the study would not deny the benefits of active citizenship, they saw that cycling should first be assembled as an integrative social space where the social processes of broadening capabilities and social

safety are intertwined (Fleuret & Atkinson, 2007). According to Coffey (2022), to move beyond individualistic and biomedically dominated notions of young people's wellbeing (as in the representation of active citizenship), research and policy should understand it as assembled and patterned by the diverse social, material and spatial conditions. Similarly, cycling research stemming from relational ontologies and assemblage thinking have problematised the hegemony of individualistic wellbeing and expanded on 'where, how, and why time spent cycling can contribute to health and wellbeing' (Waitt & Buchanan 2023; 1749). Wellbeing is contingent on the time-spaces they take place in and assembled through positive experiences and emergent social relations (Schwanen & Nixon, 2020).

These findings are summarised in Table 9 showcasing the different ways of representing youth cycling among the municipal government officials and the locals. I argue that this mismatch causes a problem in terms of recognitional justice where the public policy process fails to account how different mobile territories are available to non-white, non-affluent youths to perform urban citizenship and 'become well' through pedalling.

Notions of cycling citizenship and wellbeing	Example expressions	Expressions among city representatives (n=18)	Expressions among district representatives (n=8) and local bike advocates (n=11)
YOUTH CYCLING AS 'ACTIVE CITIZENSHIP'			
Cycling citizenship as socialisation in the Dutch society and breaking out of inert territory	'Go to work'; 'go to school'; 'find a hobby'; 'become independent'; 'get out of the house'; 'see the city'; 'meet other people'	33	10
Wellbeing as psycho-physical health	'Lose weight'; 'stay fit'; 'healthy lifestyle'; 'obesity'; 'cardio-vascular disease'	26	7
YOUTH CYCLING AS 'INTEGRATIVE SOCIAL SPACE'			
Cycling citizenship as socialisation in the local community and assembling velomobile territory	'Connect with [local] people'; 'get to know [local] people'; 'social control'; 'Caribbean cycling culture'; 'get to know your neighbourhood'	3	27
Wellbeing as social integration	'[Negotiate] identity'; 'connect with others'; 'social safety'; 'safe space'; 'therapeutic experience'	4	29

Table 9 Representations of youth cycling (author).

Procedures for making cycling youths

A key argument I want to foreground in this paper is that these issues of recognition become only visible as justice issues against the theoretical understanding of mobility justice and action research methodology that enables following up how the representations influence the actual practical bike promotion initiatives. Thus, I next turn to the implementation of the projects and issues of procedural justice.

According to the city representatives, social cycling projects in Amsterdam are organized around three themes – 'skills', 'bikes' and the 'image' of cycling, not unlike the widely acknowledged practice theoretical approach concerning the interplay of competences, materials and meanings (Shove, 2012). However, beyond this neat organizational framework, we saw that different people had very different understandings of what the projects were about. In other words, the cycling program's project portfolio, its collaborative relationships, and the actual on-the-ground activities implemented by the locals seemed to be three different things. The local bike advocates' difficulties to follow budgets, mandates and working relationships led sometimes to cynical accounts from both sides of the table:

> We have all these grants available for projects and all they would need to do is to fill up a sheet and send it to me. But you know for people like [name of a local bike advocate], this is just a lot of crap. (City representative, female, Dutch background.)

These difficulties were similarly expressed by a local bike advocate who explained why it was best to work on concrete material projects that produced tangible assets for the community:

> Projects and people, they come and go. That's why I prefer attaching things to the floor. (Local bike advocate, male, Antillean background.)

Clearly, any governance process entails structures and processes, but bureaucratic measures, 'governance language' and other social processes that exclude different groups from implementing their initiatives are important constituents of procedural mobility injustice (Sheller, 2018). One long term local bike advocate explained how the distorted processes led to inefficient activities on the ground and created unconstructive competition among the local actors:

> Do you know the word 'hosselen' ['hustling' in English]? Well, that describes very well how it has currently become, I think there is a lot of people and organisations that try to have one bit of a project here and another there to make-do. You can

> *imagine the end-results, we have projects, not processes. (Local bike advocate, male, Dutch background.)*

Below I showcase three vignettes on the projects I participated. Then I explain how the above described representations were embedded in them, by discussing the epistemic dimensions of mobility justice/commoning in the last section of the paper.

Developing competences – evaluating school cycling lessons

A national newspaper headline on a reportage from Bijlmer might come as a surprise for many: 'A quarter of Amsterdam children cannot cycle and have never even sat on a bicycle' (Het Parool, 2023). While the Dutch cycling education might be often regarded as a comprehensive 'system' and a velomobile common, all involved participants saw that currently the bicycle program was unable to educate all children how to cycle.

I was involved in a project where the city partnered with a private company and local schools to deliver lessons to children who don't know how to cycle. My assignment was to work as an intermediary between the parties and create an evaluation framework that could be used to measure the impact of the lessons. In the beginning of this project 'impact' was understood in terms of what proportion of the children taking part in the lessons *physically* learned how to cycle. However, local schoolteachers and bike advocates highlighted that children's inability to negotiate their living environments by bike was not due to lacking motor skills, but lack of social infrastructures supporting independent mobility:

> *Not so many kids in these neighborhoods even know the street names close to their home. And sometimes we blame the parents for not letting them go, but would you let your kids go alone on the bike if they couldn't tell their home street from the next one? (Local bike advocate, male, Surinamese background.)*

It became clear that cycling dispositions are a form of unevenly distributed 'capital' that children inherit from parents, siblings and extended family. Thus, I wanted to extend the evaluation assignment with some basic insights on children's on social support from family and friends, children's bike ownership and perceived 'bikeability' of their everyday environments. This was a deliberate attempt together with the participants to complicate the linear causal assumptions of cycling promotion, since according to both, local knowledge and academic studies, the connection between cycling *skills* and *practices* is modest at best (e.g. Ducheyne et al., 2014).

My supplemented evaluation framework was accepted and implemented. The results confirmed the hypotheses that children do learn to cycle when they attend cycling lessons but the number of children that reported increased cycling two months after the scheme was very low (9%). The findings were discussed among the participants in multiple occasions. Even though the point of the evaluation was to problematise the linear causal suppositions between motor skills and cycling practices and emphasise cycling as a relational practice, the city representatives were highly disappointed on the low number of 'new cyclists'. Due to unsatisfactory findings the cycling lessons faced major cutbacks.

Providing materialities – co-creating a bike kitchen

Along cycling skills, low rates of bicycle ownership and families' inability to afford bikes and repairs were considered key issues. The participants explained how growing children need to constantly upsize their bikes, and often easily fixable breakdowns as punctured tires and skipping chains force children and families to abandon bicycle use. There were multiple projects addressing these issues, but their efficiency was often contested. For example, a manager from an NGO that coordinated bicycle donations for underprivileged children and youths (more than 2.000 children's bikes around Amsterdam every year) expressed doubts on the impacts of donations and recycling schemes. Like many others she stressed that cycling materialities need to be appropriated and complemented with adequate social support:

> The bike has to be the right size, suitable for the kid and in the end we can't offer them much to choose from. And kids don't want to ride on crappy bikes and their parents don't want them to do that. There is a lot of shame and stigma connected to poverty. And also, just having a bike is not enough, you need to know how to repair the bike and keep it healthy... And even though there are all these bike lessons and exams they are not going to make kids traffic proof. You need a cycling coach, and if it's not your parent's then who is it going to be? (NGO representative, female, Dutch background.)

There had been multiple past initiatives in the area combining bike recycling and repair and some of the local bike advocates did repairs on voluntary basis. A couple of them had even generated a reputation as 'community mechanics', because there was huge demand for low-cost bicycle maintenance.

From this outset, the cycling program wanted to innovate new ways to address a whole range of bike supply, repair, maintenance, modification and recycling issues at once. This collaboration involved multiple 'community mechanics', a local sustainable development NGO and the city. My role was to support the co-creation of an open

community-led bike space: concept that has become known in practice and academia as the bike kitchen. Bike kitchens are do-it-yourself repair and recycling workshops where people are provided tools and space for repair and maintenance. By building a culture of collective learning, people can recycle bikes and parts, but also know-how and ideas to appropriate bicycle use (Abord de Chatillon, 2021). Based on the principles of sharing, co-management and open-access, bike kitchens are considered key sites of enacting and studying the commoning of velomobility (Zapata Campos et al., 2020).

The conceptualisation of the project as a bike kitchen was successful. A suitable space was found in the neighbourhood and in a relatively short time the space was fully operational. However, in the course of the co-creation process the concept was somewhat lost in translation. The key aspect of the bike kitchen concept – the creation of a community – was limited to the key group of actors and youth engagement was not implemented in any meaningful way. One critical aspect here was that the city representatives overseeing the project demanded 'hard data' in terms of how many repairs the workshop had managed to produce. This diluted attention to openness, sharing and youth empowerment, because the locals had to focus on meeting strict repair quotas. This was a disappointing result especially given that the 'community mechanics' and other involved locals had extensive networks and experience benefitting the initiative. Based on these findings the project is currently being reconceptualised.

Constructing meanings – studying #bikelife as a youth lifestyle movement

The 'image of the bike' among local youths was considered another key aspect of young people's cycling promotion, but creating influential projects was deemed challenging. As discussed regarding the representations of youth cycling, there was already anxiety towards 'awareness raising initiatives' among the locals. To find socio-culturally relevant ways to promote positive representations of cycling, the program sought to connect with local youths, adults and activities around #bikelife.

#bikelife is a relatively recent cycling movement performed on large-wheeled BMX type of 'wheelie bikes'. While there are evident similarities with skateboarding and other street cultures 'misusing' urban places, the wheelie bike phenomenon is more focused on group 'rideouts' involving wheelies and stunts *while travelling*. These 'wheelie kid crews' are known for their fleeting urban space takeovers and 'swerving' close to cars, objects and people with high speed. Amsterdam has generated a vibrant #bikelife scene along with for example London, Paris and many US cities, majority of riders being young people of colour. Stehlin (2019, 177) has described the phenomenon as 'a complex brew of youthful recklessness, ludic play, subcultural consumerism, and

immanently political practices' that contest urban youths 'confinement to territorially stigmatized zones'.

City and district representatives saw great potential in tapping into this self-organized movement because it readily involves racialized youths from deprived neighbourhoods, that the cycling program aims to target. One of the Bijlmer bike advocates was assigned to use #bikelife as a tool for youth social work. As highlighted in the previous section, he saw subcultural biking instrumental to negotiate Black migrant identity:

> *We put the bike in the middle. It's a conversation starter and a boundary object to make contact with youths. But it's not one of your Gazelles or Spartas [classic Dutch brands]. It's something appealing that can express your [non-white] identity and avoid being colonised by the Dutch bike. (Local bike advocate, male, Antillean background.)*

My role was to create an explanatory framework for this assignment based on ethnographic research with the local bike advocate and local youths. This was necessary because the city struggled to create terms of reference for the project and there was often misunderstanding and ambiguity among the actors. Just like in the other two projects, I aimed to work as a mediator, do the 'translation across difference' and incorporate qualitative rather than quantitative knowledge in the cycling policy process. Despite these efforts the project was eventually deemed unfeasible as a part of the cycling program, but overtaken and continued by the district social services.

Epistemics of the velomobile commons

At a glance, the co-creative projects described above could be considered forms of mobility commoning as I have defined it in the beginning of the paper. Yet, as these vignettes show these processes remained partial and incomplete and largely failed to reconcile different ways of knowing and acting. I argue that the different projects' attempts to disseminate cycling dispositions, material resources and meanings to 'cycling deficit' body-minds did not reach beyond what is described in mobility justice literatures as distributive justice. Here I expand my analysis on the interconnections of recognitional and procedural elements in these projects and highlight how they were informed by unequitable epistemic groundings – how relevant values and 'facts' were determined.

Firstly, in all the initiatives I observed clear limits when the use of local knowledge would reach its boundaries and when the process of commoning was interrupted,

dissolved or ambiguated. The locals were not included in projects' goal setting or impact evaluation stages, meetings were summoned almost exclusively based on the city representatives needs and locals often had little knowledge on upcoming developments. In other words, the values and facts driving the projects were not constructed through dialogical reciprocal relationships. The problems arising from this unbalanced sporadic engagement highlights why mobility commoning should be considered a continuous *process* where 'success' is not achieved by reaching predefined indicators, but by following down emergent and sometimes extemporaneous paths (Nixon & Schwanen, 2018). A district representative used the #bikelife project as an example to summarise how the inability of the cycling program to account for the local representations of cycling was connected to procedural and epistemic injustices and trumped alternative ways of working:

> *Bikelife is a very strong story. Bikelife is a safe space. The bike reflects your identity on one hand, it gives you safety, it gives you a lot of confidence and freedom. And we aim to make connections with the bicycle program, but this program is abstract, it's nothing. And when people [city representatives] search what can they do, they think in ways they know, how they are used to think. But when helping the community to start their own cycle projects, then you see what is coming up, and these seeds are already in the soil of the area. (District representative, male, Antillean background.)*

Secondly, opening up the epistemic presuppositions would demand reassessing the prevalent knowledge creation methods and the ways how young people and families are allowed to inform different projects. Collecting young people's own views was often deemed necessary, but whenever it happened, their capacity to provide original views was crippled by the surveys', statistics' and other quantitative resources' fixedness in the institutionalized ways of 'knowing' what 'mobility' is. As Sheller (2018) argues, quantifiable knowledge often leads to the dominance of certain ways of stating 'facts' about mobility and in many occasions creating this type of 'hard data' was essential for the continuance of the projects (e.g. the bike kitchen example). In consequence, the 'dialogue' between the government and the locals was always susceptible to being overruled by hegemonic truth regimes and established ways of knowing. An experienced local bike advocate explained this by referring to 'books' meaning the knowledge resources that the cycling program builds upon:

> *Whenever I go to these meetings, they have ten books about biking on the table but no books on us [Bijlmer citizens and youths]. And when they don't like what I say they can always turn to the books. (Local bike advocate, male, Antillean background.)*

Thirdly, I argue that all of the above created a fundamental contradiction regarding the essential question of cycling promotion: how young people *become* cyclists. Despite the local accounts and my work as a mediator, the projects seemed to remain stuck in reductive notions on how school cycling lessons, bike repair activities and for example city sponsored #bikelife events could 'create' new cyclists in given timespaces. Just as there was no open deliberation on the representations of cycling, there was also no deliberation on the causal sequences of events that possibly lead to young people becoming cyclist. Closing this fundamental understanding from discussion had deleterious effects on the planning and implementation of the concrete projects, as notions of learning skills and using bikes lacked relational imaginations on the integrative and social time-spaces that allow for cycling to emerge in locally relevant and culturally sensitive ways.

To the contrary, Kullman (2010; 2015) has explained how children become mobile in liminal and transitional spaces that emerge in the interactions between people, objects, discourse, atmospheres and places contributing to a sense of trust and playfulness that allow youth and families to 'become mobile' and grow up in situated ways. Thus, velomobile commons should not be confined in predefined moments and spaces but allowed to emerge in fluid and complex interactions between more-than-human and more-than-individual elements that are 'experienced and perceived somehow right' (Schwanen & Nixon, 2020, 92). This process of territorialization (Waitt & Buchanan, 2023) is inherent to the social infrastructures of many bike kitchens (Zapata Campos, 2020), collectives and mass rides like #bikelife (Castañeda, 2020) and pedagogical assemblages teaching mobility skills (Kullman, 2015) when they manage to create safe, integrative and capability enhancing spaces.

Amsterdam cycling program sets an example that these kinds of velomobile commons can and should be resourced by public bodies. Yet, my study shows that this should be based on relational understanding on how mobilities emerge, and informed by different dimensions of mobility justice or else they bear the risk of undermining the initiatives' inclusive and transformative qualities. Epistemic justice would necessitate Amsterdam cycling program to open the discussion on basic fundaments of youth cycling in Bijlmer: what 'knowledge' is used to assess and develop ongoing and upcoming projects, what counts as 'knowledge' on local youths and families' everyday lives and what are the locally relevant velomobile assemblages to become urban cyclist. As a local NGO representative explained, the social infrastructures and communities for mobility commoning exits in Bijlmer, but different public policy processes are struggling to recognize and connect with them:

The more I have worked in the area the more I feel that I can only do so much. They are so strong in themselves with all these communities and these informal helping systems. So there are a lot of networks, like the Ghanaian community, which I know best, but also based on religion and churches for example. It's just that these communities are not organized in a 'Dutch way', they are formed 'on the background' and not always recognized. (NGO representative, female, Dutch background).

Conclusions

Amsterdam cycling program has generated bold efforts to rethink cycling promotion for social justice, but my findings conclude that this is currently not accompanied by adequately democratic deliberation, procedures and epistemics. To turn the argument around, one could even say that the observed projects are not forms of 'citizen-participation' but attempts to exploit self-organised commoning processes, which could at worst create perverse effects. If for example the 'community mechanics' are co-opted in formal bike workshops, or the self-mobilised #bikelife rideouts are tamed down into city sponsored events, the cycling program could be effectively dismantling ongoing commoning processes for marginalized and racialized youths.

The aim of my action research approach has been not only to evaluate but also to facilitate more just organization of such collaboration schemes, i.e. to reconceptualize how the cycling program can work itself out in this particular context (Ackroyd, 2009). Escaping hegemonic representations, procedures and understandings and achieving an emergent and relational perspective on the production of inclusive mobility demands deterritorializing and reterritorializing the (predominantly white, Dutch, quantitatively driven) projects and processes that aim to create cycling youths. The aim of this radical recontextualization and openness should be the establishment of local velomobile commons as porous and permeable spaces (Hardt & Negri, 2009) that facilitate the local commoners to develop fluid roles (Zapata Campos, 2020) and respond to the emergent and extemporaneous nature of mobility justice (Nixon & Schwanen, 2018). Moreover, the reterritorialization of cycling promotion would also question the necessity of velomobile commons to *build* new communities (as often highlighted regarding for example bike kitchens and collectives) and focus on supplanting them *in* and *in between* existing communities that are readily meaningful for people and have the power to nurture ontological security, continuity and shared responsibility (Freudendal-Pedersen, 2022). Here, Sheller (2020) has discussed the 'ontology of moving people' in migration studies, where shared knowledge, affective cooperation and mutual support and other social infrastructures for connectivity are generated between people on the move. These commons are social infrastructures

emerging out of an ethics of care and mutual support based on affective and practical knowledge.

Currently, Amsterdam cycling program is unable to empower the locals to create such social infrastructures for youth cycling as the variegated Bijlmer community discourses, 'structural stories' (Freudendal-Pedersen, 2009), and understandings on 'how collective social needs are mediated through mobilities' (Nikolaeva et al., 2019) remain distorted, hidden and sidelined. Yet, based on my findings, this particular city might be well under way to better understand the counter-hegemonic narratives and rationalities to produce radically inclusive conditions for pedalling. What this would mean in practice (e.g. reassignment of roles and responsibilities between city representatives and the locals; reshuffling their methods of collaboration; installing long lasting and intersecting co-creation processes rather than individual projects), should be subject to subsequent analyses and bold mobility politics.

Chapter 7

Conclusions

The bicycle has a mythical dimension that is at once individual and collective. Today the myth has taken a hit. But the bicycle is making a comeback in the politics of the city and its image is subject to renewed enthusiasm.

– M. Augé (2008)[39]

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39   Own translation.

In his bicycle manifesto, anthropologist Marc Augé attests why cycling, and any 'comeback' of it, relies on collective ways of knowing what pedalling actually is. Describing the viewpoint of a certain generation in a certain place he explains how shared experiences and representations of cycling in the intersection of popular culture, sports and meaningful everyday life 'makes sense' against a given social and historical background. For Augé this collective experience is strongly linked to youth: '[t]he bicycle is part of the history of all of us. Learning to ride evokes memories of childhood and youth. Through it everyone has learned a little bit of one's body, physical capacities and discovered the freedom that comes with it' (Augé, 2008, 9). But what makes his account discerning is that he does not claim universal truths about cycling but just one of many. In other words, he offers a situated account on cycling, that is always a relational and contextual practice and able to adopt pluriversal forms (Cox, 2023). In today's car-centric societies, what is left for Augé is the 'myth' and 'utopia' of the bicycle, which well depicts its status as an abstract source of hope in times of ecological, social and urban crises.

The above chapters show how children and young people's mobilities are contextual and relational and, most importantly, why any change therein is too. They emerge in local assemblages where social and material spaces are in constant contested process of becoming through mobilities (Jensen, 2009; Massey, 2005). This is to say that any rationalities and representations deployed in the governance processes must align with *local* constellations of mobility (Creswell, 2010). These constellations involve aspirations, ideals and sensations about good life (Freudendal-Pedersen, 2009; see Chapters 4, 5), but also historically produced and spatially contingent mobility injustices (Sheller, 2018, see Chapter 6). And as we acknowledge that childhood and mobilities recursively produce one another (Barker et al., 2009), what is at stake is not only universal directly measurable movement patterns with given individual-biomedical and collective-environmental benefits, but entire childhoods with situated ways of becoming mobile, growing up and claiming urban citizenship.

But knowledge about these latter aspects of cycling is situated. This complicates (but does not dismiss) any exchanges of 'best practices' or 'policy transfer' of cycling governance from one context to another (Glaser & te Brömmelstroet, 2022; Larsen, 2017; Sheldrick et al., 2017. In realist terms, universal accounts on 'what works' for cycling become questioned[40]. The attention turns from 'implementation' of universal knowledge and procedures to the facilitation of those situations where knowledge emerges and where it can be simultaneously applied (c.f. Gibbons et al., 1994). This is what this study has attempted to do within a realist framework by prefiguring counter-hegemonic forms and governance processes of youth cycling. My argument is that

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40   For an elaboration see universalising account of Nello-Deakin (2020) and situated response from Castañeda (2021).

these instances of talking about and doing things on and for cycling should account for pluriversal and emergent mobility rationalities and representations in open-ended processes facilitated by democratic working relations, practical experimentation, reflection and learning. The above chapters explain the concrete implications of this approach for how cycling transitions are studied (**Subtask 1**) and governed (**Subtask 2**).

But the apparent controversy here is that if we acknowledge pedallings as pluriversal, there is little hope in sorting out 'right' interventions that 'work' for many people. In other words, the positivist question of 'what works' is dismissed as *unrealistic* and the realist question 'what works, for whom under what circumstances and why' is too complex, even though it can be truth-like. But as elaborated in Chapter 2, the ambition of critical realist approaches is that appreciating situatedness and contextuality should not confine us to cultural relativism, tyranny of participation and domination of local knowledge – or what realists would call 'defeatist' postmodernism (Emmel, 2021; Sayer, 2000). By conceptualising social mechanisms, the operation of which is contextually dependent (context & mechanisms => outcomes), we *can* make causal claims even though they remain fallible and tentative. Effectively, the aim here is to bust the 'myth' of the bicycle, in Augé's terms, by studying social mechanisms and coupling these understandings with contextual knowledge to facilitate effective and just governance processes. The point is that these dynamics are complex, but not 'mythical': as put by Roy Bhaskar, despite being unobservable, generative social mechanisms are 'nothing else than ways of acting of things' (2008, 3).

To embrace contextuality and still provide generalisable results, the study has unravelled two social mechanisms that, I argue, are likely to work in many time-spaces for different youths, but in contextually contingent ways. Indeed, in the realist view generalization from case studies can only happen by theorising social mechanisms (retroduction) and explaining their operation (abduction) (Ackroyd, 2009; Emmel, 2021).

Based on Chapters 4 and 5, the mechanism of velonomy is conceptualised as individuals' participation in collective generation and use of assets, meanings and dispositions for cycling to gain a degree of independence from the hegemonic system of transportation. Respectively, based on Chapter 6 the mechanism of commoning is conceptualised as the process of assembling and opening up those resources that are needed for velonomy[41]. In other words, the mechanism that case study 1 identified

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41 The concept of velonomy is not used in Chapter 6 to avoid conceptual confusion, but evidently the aim of all the initiatives in case study 2 was to facilitate children becoming mobile in the very same sense that they did in case study 1.

(velonomy) was studied in case study 2 as the subject of another *broader* mechanism (mobility commoning)[42]. Indeed, what remains undiscussed at this point is how these two mechanisms can work together. To subscribe to the realist understanding that social mechanisms also *co-exists and intersect*, in the following I use the realist retroductive method (see Figure 2) once more to infer what that means for velonomy and mobility commoning. In other words, I take 'nuggets of evidence' (Pawson, 2006) from the case studies and put them in dialogue with theoretical ideas about mobilities and communities that can explain synergies of velonomy and mobility commoning. Eventually, what I suggest is that together these mechanisms can, in realist terms, *actualise* governance practices that don't not only emphasise *collaborative governance* among diverse actors but *community cycling governance*. Here cycling is made governable and amenable to intervention *in* and *through* the very communities it seeks to mobilise.

Community cycling governance

A key argument of the study is that what cycling can offer for children and young people in certain time-spaces is likely far off from what it can offer to the policy agendas of sustainable development, health promotion and transport. The critical stance towards mainstream research and governance rationalities is not to undermine for example the fact that less than 20 percent of children (age 5–17) worldwide meet the WHO target of daily physical activity (see Marzi & Reimers, 2018). These problems are real, but *they don't as such contain the solutions.* Put another way, the issues that cycling is hoped to solve are essentially something else than those social mechanisms that get people pedalling (for a similar argument see Cupples & Ridley, 2008). And still, the former are powerful to shape governance rationalities making them instrumental and functional (Chapter 4).

The key deficiency of instrumental and functional governance rationalities is that they are overly *individualistic*. As discussed in the above, rationalities and representations encompass *the how* and *the why* of cycling promotion and advocacy. In the individualistic view regarding the *how*, 'fixing' urban problems through mobility becomes the responsibility of (capable, standardised and privileged) individuals (Spinney, 2018). And regarding the *why*, the benefits of cycling are largely limited to the individual biomedical body-minds. Here cycling is a type of self-help that people need to deploy to come up as active, healthy and environmental citizens (Aldred, 2012; 2015). Yet, as highlighted in mobilities studies time and time again this kind of a notion of an unrestricted and rational mobile subject is utopistic (e.g. Manderscheid, 2014) – or

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42   Cf. Figure 4 in Chapter 2.

as would be fitting to say in this study, it is not *realistic*. Behaviour change approaches don't account for how practices and networks are culturally assembled when producing and performing city space (Cox, 2023, Jensen, 2014). And at the same time mobilities of some are often facilitated and restricted by those of others (Sheller, 2018). These interconnected workings of mobility *cultures* and *powers* certainly apply to children and young people, but not only in the sense that their mobilities largely depend on adults. As Murray and Cortes-Morales (2019) explain, when we talk not about movement patterns but *mobilities*, we come to appreciate that children and young people's mobilities are about *all* people's mobilities. If we are to facilitate social, spatial and material environments where 'childish' pedallings are possible and desirable we must take issue with the entire constellation of mobility, far and wide beyond individual 'journeys' of individual body-minds.

To align with the definition of cycling governance in Chapter 1 (Valentini, 2024), positivist cycling governance and research seek to make pedalling *governable* and *amenable* to interventions by problematising *individual* behaviours and raising awareness on its *individual* benefits. This means creating conditions for atomised and responsibilised individuals to 'choose' certain mobilities to 'gain' individual benefits. But the argument foregrounded in this study is that both, 'choosing' and 'gaining' are collective processes that are neither solely imposed from top-down structures, nor are a linear result of people's agency. Many studies have discussed how cycling is co-produced in diverse horizontal and vertical actor-relations, that is, the sayings and doings of people on bikes make a difference alongside planners, physical designs and campaigns (Aldred & Jungnickel, 2014; Doughty & Murray, 2016; Jensen, 2014; Larsen, 2017). Based on my findings I argue that these sayings and doings entail contextual and situated knowledge concerning why mobilities *matter* to people as *communities*.

Why communities matter to mobilities and why mobilities matter to communities

> *Changing everyday mobility practices means changing the organization of everyday life. Everyday life organization is also about creating ontological security, to have meaning and get recognition for the paths chosen. This happens in communities and during the last decade, communities have re-emerged as one of the important issues within public debate and political discussions as constituting the backbone of cities (Freudendal-Pedersen, 2022, 8).*

Thinking about mobility as a *community* issue is perhaps quickly countered by the notion that mobilities are key phenomena facilitating the differing intermingling processes of *individualisation* manifest in metaphors such as liquidity, flows, fluidity

and nomadism (Bauman, 2000; Castells; 1996; Creswell, 2006; Deleuze & Guattari, 2004). In parallel, it seems quite right to think of physical everyday mobilities as routines: they are habitual practices that are not renegotiated on an everyday basis and as such might seem less than spectacular. But according to Freudendal-Pedersen (2009; 2022), individualised and routinised understanding undermines the amount of reflexive and evaluative work that people do in late modern societies and what role communities play in these processes. She builds her arguments on classic sociological literatures on reflexive modernisation (Beck et al., 1994). In the post-traditional society old structures based on religion, locality, family and other markers are no more taken for granted as an overarching guidance for life choices. People face a constant stream of choices to make with very little guidance on the repercussions. This is what Kesselring (2008; 2024), drawing on Beck (1992), has called the mobile risk society: social, political and economic conditions that responsibilise individuals to make up their own life trajectories in uncertain conditions in and through mobilities, in the midst of looming environmental, social and economic risks. In other words, late modern society *forces* people to make use of their freedom, and creates pressure to reflect and makes choices on mobilities (Freudendal-Pedersen, 2009).

Difficulties to handle this social condition push individuals to look for guidance in other people that they recognise being similarly situated. Bauman (2001) has emphasised that because 'community' is 'a paradise lost' in an individualised world where late modern subjects are uprooted from traditional settings, people are feverishly seeking for connection and loosely formed communities remain important. Based on a series of studies Freudendal-Pedersen (2022, 3) shows how 'communities exist, expand, and are sustained through localized and virtual forms of sharing responsibility, exchanging life experiences, creating meaning, and giving ontological security to people's lives' in and through mobilities. One very concrete way this happens is through shared narratives that she labels 'structural stories' (Freudendal-Pedersen, 2009). Statements like 'when you have children, you need a car' are key in providing people with tangible criteria to organise their life in and through mobility. Subsequently, as communities still provide essential 'ontological security' to everyday lives they have the power to change practices, which was very apparent in for example in the parents' experiences in Chapter 5. Subsequently, mobility policies, initiatives and governance processes should acknowledge these conditions when evaluating what kinds of knowledges are valid for shaping mobilities: 'the increasingly individualisation of all societal issues and challenges is a huge burden in managing everyday life. Thus, the critique [of individualistic approaches] stems from a desire to formulate strategies for action and change through communities interlacing with individual experience of everyday life' (Freudendal-Pedersen, 2010, 28). This way, reflexive modernisation and connected

life politics are important frames to understand communally constructed mobilities, and for that matter, childhood, youth and parenting.

Wellbeing and social justice in collective cultures of movement

Given this meaning of communities for 'ontological security', the attention turns to how pedalling is enacted and given meaning as cultural practice and how movements facilitate the production of space where communities are 'dwelling in motion' (Urry, 2007, 31, 124-130). Across the empirical cases of this study, a key aspect in this regard is how children and young people's velonomy problematises any dichotomy between fixity and movement. Initiatives like #bikelife rideouts, bike buses and other ways of being mobile 'with' are effectively producing social spaces on the move, that in turn should be understood as velomobile commons (Sheller, 2023). In Jensen's (2009) terms, they are cultures of movement where sedentary and controlled notions of childhood and youth get challenged: be it in relation to the native middle-class youths mobilities in Finland or lower class racialised youths mobilities in the Netherlands. The basic quantifiable parameters of conventional transport research as 'journeys' or 'destinations' become obsolete and impotent in explaining how pedalling is constructed and lived as a meaningful social practice. These notions invite to look at the street not as a space for traffic, but as a space for people and a site of social interaction (Jacobs, 1961). Especially against the above discussed institutionalisation, domestication and spatial segregation of childhoods, these notions suggest collapsing the dichotomy of the exterior (streets, courtyards, building fronts) and interior (home, car, institutional spaces) where play and sociability are not the 'destination' but the *function* of flows (Benjamin, 2002, 879, cited in Jensen, 2009). In other words, not unlike bike kitchens, riding collectives or other commoning initiatives, velonomy and the mobility practices it produces can *as such* form communities of practice (Jensen 2006). In other words, velonomy is effectively an integral part of assembling children and young people's velomobile commons.

Yet, as has been discussed these mechanisms are evidently countered by opposing social forces. Movement cultures are redundant if they cannot take issue with prevalent politics of mobility. Here I would argue that through velonomy and commmoning children, young people and adults can all attend to the politics of mobility of everyday life, not only through movement but through pleasure, play and fun (MacIlvenny, 2016; Horton et al., 2014). Collective playful movements enforce alternative rationalities on the cost-benefit-focused, technocratic and measurement-obsessed mobility system (Jensen, 2006, 154; 2009 also Castañeda, 2022). Here, *governance* is not limited to *government* or even *governmentality* because mobilities are embodied, spatial and material practices, where power also works through kinetic, sensuous and ambient

experiences of spatialised mobile subjects (Jensen, 2011; Doughty & Murray, 2016, see Chapter 4). Jensen (2009, 148) makes it clear:

> *Mobility becomes related to a 'molecular politics' in this perspective as the practices and movements are placing and displacing actors, making connections and disconnects, constructing experiences or dispensing with experience all dependent on how and where we move. Thus, the armatures and the vehicles operating within them are sites not only of identity-making and culture but also of contestation and politics.*

In terms of this study, children and young people's velomobile communities and cultures can *prefigure* realities that don't *yet* exist, but are real because they are *realisable* (on a realist account, see Archer, 2019).

Situated knowledge on wellbeing and justice

Moreover, as examples from the chapters above highlight, experimenting, enacting and reflecting these practices can be revelatory to collective understandings of how cycling attends to wellbeing. Here 'wellbeing' means departure from individualist biomedical and psychological health, and establishes it as a more-than-human achievement that is assembled across 'materiality, discourse, practices, techniques and affective intensities' (Schwanen & Atkinson, 2015, 99). Turning to senses and sensibilities of pedalling enables people's capabilities of *feeling* the bicycle, just like people are *feeling* the car (Sheller, 2004), and subsequent wellbeing in moving bodies (Kwan & Schwanen, 2016; Nordbakke & Schwanen, 2014). Crucially, social mechanisms that can facilitate governance change, as velonomy and mobility commoning, often demand sharing and reflecting these experiences with other people they recognise as similarly situated and that have similar experiences of pedalling 'experienced somehow right' (Schwanen & Nixon, 2020, 92). They are deliberative practices (Sheller, 2018), and collective reflection can, again, feed back to what Freudendal-Pedersen calls ontological security to support individuals' understandings of desirable change. This kind of social learning provides cycling governance with crucial situated knowledge to develop just and fit-for-purpose rationalities and representations. In other words, mobility policy and governance can come to acknowledge the affective politics of mobility in everyday life and pedalling as *territorialising practice* (Waitt & Buchanan, 2023; Waitt et al., 2021, Chapter 6).

Based on the findings of the study and these theoretical elaborations, I argue that by rethinking cycling governance in and through communities, we can trigger social mechanisms that facilitate more pluriversal and just cycling governance. Mobilities matter to *communities* and *communities* hold the access to understandings how children and adults can 'become well' through pedalling in certain time-spaces. Moreover,

the reverse is also true: communities contain the firsthand access to knowledge on how mobilities can make people 'become unwell'. Here, situated knowledge is key for understanding relational forms of wellbeing but also addressing mobility injustices (Sheller, 2018). Especially the move beyond mere distributive justice demands recognising and deliberating *what is it exactly* in given communities' socio-spatial positioning that gives root to mobility injustice. And in practical terms, it is difficult to see how this knowledge can be embedded in governance processes without working with an open-ended approach with the communities themselves to learn what contextual, emergent and even extemporaneous recognitional, procedural and epistemic aspects of mobility justices are about (Nixon & Schwanen, 2019).

Once these mechanisms are identified in their local contexts, they can be acted on to develop more inclusive and just cycling governance. Subsequently they can *actualise* into empirically observable and practical governance approaches. This is what I label community cycling governance. This study has aimed to create only two concrete forms of it and subsequent ones remain subject to future projects, initiatives and inquiries. But most importantly, this study makes the case for *why* it is *realisable*. Because communities 1) matter to mobilities (and vice versa, Freudendal-Pedersen, 2022); 2) can create collective cultures of movements (Jensen, 2009) and in both these respects 3) hold access to crucial situated knowledge regarding wellbeing and social justice, this study lays down an invitation to trigger velonomy and mobility commoning across contexts to actualise local forms of community cycling governance.
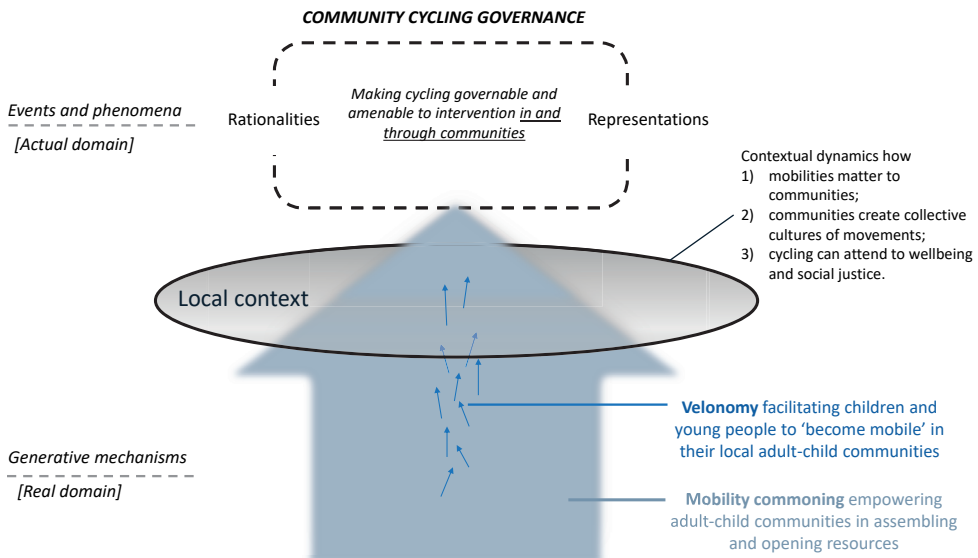
Figure 9 Community cycling governance (author, cf. Figures 1, 4 and 5).

Here the case is made especially for children and young people, who, after all, remain more dependent on the social infrastructures around them than many other groups (no matter how agentic and mobile we wish them to be). Yet, the approach can be extended to all people whose pedallings might be currently marginalised.

Final reflections and implications for research and practice

Generally, there are of course many reasons why collaborative, networked or more democratic governance processes are pursued (Kapucu & Hu, 2020; Somerville, 2005). In the field of urban mobility, the relative shift from 'state-centric' to 'society-centric' focus highlights how governance and power are networked in contemporary societies and what kinds of opportunities this entails for governance and research (Karner et al., 2020). The demand to develop these types of approaches has been around since long, based on the understanding that 'open and active involvement of all parties would be far more effective than the conventional passive means of persuasion' including broad coalitions among specialists, researchers, practitioners, policy makers and activists (Banister, 2008, 79). Here, mobility commoning has been suggested as the crucial 'governance shift' (Nikolaeva et al., 2019). But I wish to conceive of community cycling governance separately from commoning to underline that social mechanisms (velonomy and commoning) that governance rationalities and representations emerge from, are ontologically separate from the *actual*, empirically observable governance practices (community cycling governance)[43]. In other words, it should be thought of as an outcome of a process where velonomy and commoning become locally manifest according to the points 1-3 in Figure 9.

For the very last, I reflect on some key themes related to my research process(es), including the limitations of the study and the overall meaning of the realist action research approach to the field of study.

Learning and experimentation
Community cycling governance is to emphasise the meaning of the local, situated and communally shared understandings of cycling, but in the realist regard that is not all there is. Indeed, the whole approach elaborated in Chapter 2 is to counter the dilemma between 'general' and 'contextual' by establishing that many truth-like explanations co-exist but some explanations are better than others. The point is that when working with communities and projects involving diverse actors, openness to 'pluriversal pedallings' must be coupled with critical mode of inquiry, that diverts the

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43   For example, in the contexts of my study, mobility commoning arguably takes rather different forms in the respective governance and political cultures of Finland and the Netherlands.

tyranny of participation and domination of local knowledge. While local communities have the first-hand access to situated understandings of mobility, wellbeing and social justice, they do not *automatically* possess it and even their understandings are necessarily fallible. As this study has showed it is crucial that contextual accounts are embedded in governance processes, but also that these processes allow social learning for *all* parties involved including the communities themselves. For example, in case study 1 the community of parents was quite determined that there was no option for chauffeuring children, which was seriously contested in the learning process. In case study 2 the aim was indeed to reconcile different ways of knowing through learning (Sheller, 2018) rather than grant supremacy to 'local knowledge' (Sayer, 1993).

To facilitate such learning, it is beneficial when local communities provide readily meaningful sites for experimentation (i.e. provide 'ontological security' and means for sharing responsibilities, Freudendal-Pedersen, 2022). This study has explained how learning can emerge by experimenting with novel governance practices and social initiatives and discussed the intersection of social and experimental learning (Bartels, 2023, Chapter 3).[44] In the burgeoning interconnected fields of urban experiments (Evans & Karvonen, 2016), social innovations (Moulaert et al., 2016) and tactical/DIY urbanism (Mould, 2014) these aspects are taken into account to different degrees. But based on my study I argue that transformativity of research designs and approaches depends on the effective *combination* of experimentation and learning, action and reflection. Either one alone is susceptible to crucial omissions regarding both creation of change and understanding it. In conceptual terms I have addressed these issues especially by using the concepts of rationalities and representations to understand how people *act* and *organise* for cycling (action/experimentation), and how they come to *understand* and *represent* their ways of acting and organising (reflection/learning) in experimental settings. Moreover, studying ongoing rather than past change processes helps to tackle the problem of post-hoc rationalization of actors and the fact that interviews often might not cover a comprehensive reflection of how things unfolded (Schwanen 2021; e.g. see Chapter 4 with the different stages, where different rationalities prevailed).

What is more I also want to highlight the role and meaning of theory in understanding these dynamics. Parts of the action research tradition have been notoriously neglectful

<div style="margin-left:2em; font-style:italic; writing-mode:vertical-rl">Chapter 7</div>

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44   It is widely acknowledged that transition experiments are not designed to establish causal relationship but seek to unravel emergent processes of socio-technical evolution (Evans & Karvonen, 2016). These approaches are implicitly realist: while realist research stems from the criticism towards controlled trials and positivist experiments in open systems, realism does not dismiss the possibility of experiments altogether (Bhaskar, 2015, 48; Collier, 1994, 165). The point is how they are being used. To put this in the context of the study, when mobility practices and representations are mobilized through experimental initiaitives and new ways of governing cycling projects, new aspects become more visible that bear relevance to more global understandings on the social mechanisms underpinning mobility patterns (Buch-Hansen & Nielsen, 2020, 67-68). The fact that actual phenomena are 'out of phase' with the mechanisms that generate them, makes experimentation intelligible activity.

towards theoretical development. This applies to both the metatheoretical level as well as the more practical application of ideas. Here, I would argue that in addition to *using* theory in action oriented and experimental settings it is equally important *how* it is used. I advocate for internal dynamism and functionality of theoretical accounts. I.e. while large parts of research consider theory as something researchers 'apply' and that needs to be merely statically described, the realist action research approach sets an example of how theoretical ideas can direct and redirect the whole research approach (Friedman & Rogers, 2009). Here, good theory is simultaneously practical and manages to theorise on practices, by connecting to concrete action and experiences.

Finally, when designing experimental learning initiatives in research and practice it is crucial to appreciate the limitations of the approach developed here. The iterative processes where action and reflection, and theoretical development and empirical observation take turns necessarily stops somewhere with a necessarily fallible model of how social mechanisms work in the given context (Emmel, 2021). Studies, evaluations and governance processes operate within finite resources that set rather concrete boundaries to knowledge creation and action. To avoid prematurely ending research processes and engagements with the actors, it is crucial to understand the focus of the approach: if the aim is to understand certain highly formative processes (case study 1) or analyse the functioning of programs more holistically (case study 2) (Ackroyd, 2009, see Figure 4 in Chapter 2). For example, in this study, the first case as an individual 'project' was able to link the reflections of children and adults' everyday experiences with governance process, but the second one, moving to a larger scale of an entire 'program' could not accommodate this. In this more extensive approach, there was simply no means for an individual study (with an individual researcher) to research children and adults' experiences of the initiatives and everyday mobility and put them in dialogue with the governance processes. But, in turn, as the second study observed the functioning of a whole cycling program in a specific context it was able to explain how the overarching governance process is marginalising *certain* types of cycling in a *certain* mobility constellation. Indeed, as explained in Chapter 2, having these two research approaches follow one another was with the aim of generating complementary insights. But I would say that facilitating research designs where intensive and extensive designs can produce combined accounts on specific formative processes (e.g. velonomy) and holistic overviews (e.g. mobility commoning) could yield rather important insights.

Flexibility and reflexivity

However, *reflection* and learning embedded in governance and research methods is different from *reflexivity* (Stirling, 2006). In practical research and governance settings there are multiple epistemic complications to collaborative/community governance,

for instance, how any legitimacy is conferred or constructed for certain people to talk and act on behalf of certain 'community' (Connelly, 2011). Indeed, there are both, democratic problems and potentials associated with interactive governance approaches (Sørensen & Torfing, 2005). But overall, the key is that mobility injustices are not only reproduced in mobility and governance practices but also in mobilities research itself.

In action research reflexivity has been extensively discussed from a more practical viewpoint regarding the role of researchers in instigating initiatives and disseminating knowledge (Wittmayer & Schäpke, 2015). However, especially regarding the above elaborations on situated knowledge, wellbeing and social justice, research reflexivity is an important constituent of mobility justice (Butz & Cook, 2020). While full reflexivity about the researcher, researched and the research context might be idealistic (Rose, 1997), what we *can* do is develop systematic techniques for reflexivity. Generally, the aim of such techniques is remaining open and flexible towards uncertain and iterative developments (Lindberg et al., 2024). This is important regarding the reliability of findings as it makes new meanings and understandings possible and is capable of keeping up with the extemporaneous nature of mobility justice (Nixon & Schwanen, 2020).

This definitely applies to realist research processes, that aim to direct and redirect the research questions throughout the process to understand 'what is this a case of'. (Emmel, 2015; 2021). In my study, I emphasise this point for instance by referring to (open) 'research process' rather than (predefined) 'research design' when discussing the sequences of events that took place in the case studies. The term 'design' in this study refers to the approach adopted in the canon of realist research (Ackroyd, 2009). My concrete techniques to avoid reproducing epistemic injustice entailed, firstly, continuous reflection on the empirical work with my thesis supervisors and other colleagues (not unlike Lindberg et al., 2024). I reckon that the interdisciplinary embedding of the study was very useful here. Secondly, the realist methodology in itself entails 'verifying/falsifying' hypotheses with the participants through inquiry, action, reflection and even co-designing research. In other words, the realist method responsibilises the researcher to go back to the study participants to check her theoretical insights (see Manzano, 2022. Third, on a more theoretical level, by coupling ontological realism with epistemological relativism and the fallibility of knowledge critical realist methodology is acknowledging the situatedness of knowledge and how it is enmeshed in the '…politics and epistemologies of location, positioning, and situating, where partiality and not universality is the condition of being heard to make rational knowledge claims' (Haraway, 1988, 589). Yet at the same time the aim

Chapter 7

is to produce rational grounds for judgemental rationality (see Chapter 2), that is, to establish some explanations as more truth-like than others[45].

These elaborations highlight how incredibly complex it is in participatory and action-oriented research settings to determine what are considered 'problems', 'solutions' or 'improvements' if the research approach and/or the community in question does not have any normative stance. Indeed, even though the emancipatory aims of action research are often highlighted, no method is as such empowering to participants (Butz & Cook, 2020). For realists an important quality standard of research is the ability to explain just why some approach is emancipating and this in turn demands admitting the necessarily political nature of all academic practice (Sayer, 1993). Thus, it is far better to be consciously normative about certain aspects of the study, than naively 'objective'. Objectivity does not mean value neutrality (Sayer, 2011) and this is what Cox (2023) also means by dismissing apolitical notions of 'innocent' cycling research and demanding the application of value-based methodologies to break out from path-dependent thinking.

Finally, regarding children and young people, mobility research can arguably still push its limits by critically assessing how we might fall victim of our latent understandings of 'usefulness' of certain insights, methods and knowledge. As criticised by Horton and Kraftl (2005, 133): 'all sorts of things-in-the-world and geographies which are habitually underestimated in this way—the entire realm of small, banal, low-key, daft, happenstance things, moments, events, practices, experiences, emotions, complexities, quirks, details and who-knows-what-else? in and of everyday lives, for instance—ought to be taken far more seriously'. Indeed, as argued throughout, it is those aspects of pedalling that *matter* to children themselves that can trigger community wide changes and shape shared ideas and representations of mobility. For an adult's gaze, these initial sparks that can create bangs might initially seem 'unspectacular', to say the least (e.g. Horton et al., 2014). In this study, these aspects are most vividly expressed in Chapter 3, where children discussed their experiences.

In total research reflexivity in mobilities studies is a complex issue, but recent theoretical-methodological accounts have taken the discussion forward (Butz & Cook, 2020; Lindberg et al., 2024; Sheller, 2018). Here, especially the body of work on mobile methods has pushed these issues forward with its 'reflexive mobilization of the sociological imagination' (Sheller, 2014, 804). Realism can provide crucial guidance in this regard, but I cannot fully engage with these discussions here (but see for example Sayer, 2011).

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45   For elaborate discussions in these dynamics in feminist research see Sweet (2018) and Smirthwaite & Swahnberg (2018).

Moving forward with a transformative research agenda

With the practical, theoretical and methodological approach developed here, I want to create a concrete example of a 'society centric' approach (Karner et al., 2020) where 'instead of remaining in the role of the classical scientist, merely describing and criticizing developments in the world, mobility scholars should also engage in the mobility transition agenda and bring their knowledge to where it is needed and can generate an impact' (Kesselring, 2024, 16). My contribution seeks to show the usefulness and validity of the realist action research approach in developing transformative ideas such as velonomy and mobility commoning. Above all this is to solve the dilemma between contextual and general ways of 'knowing' cycling – for facilitating pluriversal pedallings demands them both.

While cycling children seems like a simple answer to many contemporary urban issues across the globe, the change that is needed for it is a radical one. Imaginaries and prefigurative politics around play, care and learning demand complementing and partly abandoning prevalent notions of 'transport', but through processes that are creative, reflexive, experimental, shared and educating respective to the practices and social relations that *matter* to people. Here the role of the (realist) researcher is participating in local learning processes, making causal claims about social mechanisms in play and exchanging ideas across geographic and disciplinary borders. If we believe in the abilities of research to create change, we must acknowledge that not *everything* that we can know about cycling in a given time and place is local, contextual and situated and the social science remains the best available tool for explaining it. But if we assume this stance, what follows is a responsibility to engage with practitioners, policymakers activists, communities and other actors with something at stake. In the case of children and youths concepts like 'child-centric planning' and 'child-friendly cities' have perhaps rendered young generations more prominent subjects and objects of urban governance, but important research gasp exist regarding how such cities are actually governed (Cordero-Vinueza, 2023). This study makes a case from the mobility perspective especially by thinking and acting on mobility governance as an issue of communities.

The method this study suggests is prefiguration. As discussed in Chapter 3, it is not a novel invention. For children's cycling, many actors are readily using prefigurative practices. Kidical Mass demonstrations (kidsonbike.org), school street experiments (e.g. City of Paris, 2023) and for example the bike bus movement (Simón i Mas, 2023) are effectively enacting realisable not-yet-realities. Studying the tactics and strategies would merit more academic attention and research can also concretely support them for example by providing actors with platforms for collaboration and reflection (as has been done in this study). A key aspect here is how social movement

actors choose to engage with mainstream planning and policymaking (Cox, 2024). These networks seem to often work well, but one should be wary that outsourcing cycling to the civic sector or co-opting radical initiatives in the governance processes have been efficient ways to marginalise cycling (Aldred, 2012; Spinney, 2010; see also Savini & Bertolini, 2019). 'Participation' does not always mean 'listening' let alone 'understanding' the situated accounts on pedalling and critical research should continue to critically examine such collaborations. Here social scientists may interfere to facilitate reconciliation of different ways of knowing. But it is also notable that these ways of knowing may not always take linguistic forms. Children and young people can engage in prefigurative practice without explicit political claims, the best example here being the self-organised #bikelife rideouts, that question the urban order solely through embodied and affective practices. Engaging and supporting such initiatives needs further methodological inventiveness.

Importantly this study highlights the meaning of facilitating social infrastructures for cycling, along physical ones. While much attention is focusing on physical infrastructure solutions, technologies and innovation in creating change, according to Kesselring (2024, 16), we are largely missing the socio-cultural 'compass' that can connect such insights 'with the social structures and cultural settings of societies, citizens, workers, children, students, and so forth'. This study has focused solely on social cycling projects (but including some material elements), to make it apparent that cycling governance and transition simply cannot be void of social structures and meaning – void of culture. Unravelling and triggering such 'cultures of movements and flows of meaning' (Jensen, 2009) is possible if studies are actively getting people to experiment new things and share their experiences with people they relate to. Subsequently they can perhaps provide more elaborated accounts on why change was or is *not yet* possible and what needs to happen. Yet, this does not emerge from methodological templates or other cook-book solutions but by giving credit to people – children and adults, lay people and experts – as sentient beings capable of experiencing and reflecting different states of being. As Sayer (2011) explains in his book *Why things matter to people* by virtue of their ability suffer and flourish all people are reflexive and their relationships with the world is evaluative. It is only by understanding how and why pedalling *matters* to people that research can grasp meaningful ways of prefiguring different futures. This is a piecemeal exercise demanding simultaneously countering current structures and enacting new ones[46]. It is not possible to disengage from the world if change is the aim (Sayer, 2004).

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46   Both Sayer (2011) and Emmel (2021) use the metaphor of Neurath's boat meaning a process of rebuilding a ship one part at a time without ever being able to go to shore. Yet, Sayer emphasises that concepts that are not trapped in conventional ways of thinking are enabling 'us to do some of the rebuilding on land' (247). I think of velonomy and mobility commoning as such.

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Summary

Reversing the politics of youth velonomy. Realist action research on the pluriversal rationalities and representations of collaborative cycling governance.

In the 2020s numerous cities and societies are making efforts, investments, and changes to (re)establish urban cycling as a sustainable, inclusive and convenient mode of urban mobility. However, a growing body of critical cycling research shows that this narrative is marred by inequalities respective to class, gender, age, ethnicity and other social markers. Cycling governance and advocacy are criticised for being stuck in reductive transport rationalities and reproducing exclusive representations of 'cyclists' and 'cycling'. Urban cycling might currently be unable to meet its emancipatory and progressive potentials.

This thesis addresses the concerns around one group that is evidently crucial for the future of urban mobility but who have gained little attention in the field of mobility transitions: children and young people. Moving beyond universal rationalities of producing healthy, sustainable and active cycling citizens, the study uses experimental cycling initiatives to prefigure (*enact here and now*) and explain forms and governance processes of youth cycling, that are currently marginalised in power-laden, locally contingent and discursively shaped constellations of mobility.

The research consists of two case studies, one in Jyväskylä, Finland and another one in Amsterdam, The Netherlands. While these contexts provide generally good conditions to promote children and young people's cycling practices, certain phenomena around childhood and youth continue to undermine the positive potential of children's cycling autonomy. The first study facilitated a project on middle-class children's leisure mobilities that are increasingly dictated by various organised activities and, subsequently, car- and adult-dependent mobility. The second study looked at the operation of the Amsterdam cycling program in the context of racialised, lower-class youths in the urban periphery that, despite adequate cycling infrastructures, have significantly lower rates of cycling compared to their (native, white) peers in other parts of the city. In both cases the study involved a diverse group of cycling advocates, promotors, parents and other local community members to co-create experimental processes where rationalities and representations of cycling governance could be reconfigured.

Methodologically the study seeks to build bridges between mobilities research and critical realist social research by deploying a realist action research approach. Following critical realist ontology, epistemology and mode of inquiry, the study seeks to identify social mechanisms that can facilitate shifts in governance rationalities and representations. From these premises follows the research question: What social mechanisms do the experimental cycling initiatives trigger to actualise rationalities and representations of youth cycling that counteract hegemonic practices and discourses? In result the study conceptualises youth velonomy and mobility commoning as key social processes to facilitate transformative change in cycling governance. The former refers to individuals' participation in collective generation and use of assets, meanings and dispositions for cycling to gain a degree of independence from the hegemonic system of transportation. The latter is conceptualised as the process of assembling and opening up those resources that are needed for velonomy. In conclusion the study argues how these mechanisms can work in synergy to produce forms of *community cycling governance,* where governance processes are embedded in the very communities they seek to mobilise.

Proefschriftsamenvatting

Het omkeren van de politiek van de jeugd velonomy. Realistisch actieonderzoek naar de pluriversele rationaliteiten en representaties van collaboratief fietsbestuur.

In de jaren 2020 proberen steden om fietsen in de stad te (her)introduceren als een duurzaam, inclusief en handig vervoersmiddel. Echter, een groeiende hoeveelheid kritisch fietsonderzoek toont aan dat hierin vaak weinig aandacht is voor ongelijkheid met betrekking tot klasse, geslacht, leeftijd, etniciteit en andere sociale kenmerken. Fietsbeleid en belangenbehartiging worden bekritiseerd omdat ze vastzitten in beperkende ideeën over wat mobiliteit is. Hierdoor reproduceren ze exclusieve representaties van 'fietsers' en 'fietsen'. Hierdoor mist veel fietsbeleid haar emancipatorische en progressieve potentieel.

Deze dissertatie richt zich specifiek op zorgen rond een groep die duidelijk cruciaal is voor de toekomst van stedelijke mobiliteit, maar die weinig aandacht heeft gekregen op het gebied van mobiliteitstransities: kinderen en jongeren. Het onderzoek gaat verder dan mainstream ideeën over het produceren van gezonde, duurzame en actieve fietsende burgers en gebruikt experimentele fietsinitiatieven om nieuwe vormen en bestuursprocessen van jeugdfietsen te prefigureren (hier en nu uit te voeren). Daarnaast probeert het te verklaren, hoe andere ideeën over fietsende kinderen en jongeren momenteel gemarginaliseerd worden in lokaal-afhankelijke en discursief vormgegeven constellaties van mobiliteit die met macht zijn beladen.

Het onderzoek bestaat uit twee casestudies, één in Jyväskylä, Finland en één in Amsterdam, Nederland. Hoewel beide contexten over het algemeen goede omstandigheden bieden om de fietspraktijk van kinderen en jongeren te bevorderen, blijven bepaalde fenomenen rond kindertijd en jeugd het positieve potentieel van de fietsautonomie van kinderen ondermijnen. De eerste studie faciliteerde een project over de vrijetijdsmobiliteit van kinderen uit de middenklasse die steeds meer wordt gedicteerd door verschillende georganiseerde activiteiten en, als gevolg daarvan, auto- en volwassenenafhankelijke mobiliteit. De tweede studie keek naar de werking van het Amsterdamse fietsbeleid in de context van raciale jongeren uit de lagere klassen in de stadsrand die, ondanks een adequate fietsinfrastructuur, significant minder fietsen dan hun (autochtone, blanke) leeftijdsgenoten in andere delen van de stad. In beide gevallen betrok het onderzoek een diverse groep van fietsvoorstanders, promotors, ouders en andere lokale gemeenschapsleden bij het co-creëren van experimentele processen waar rationaliteiten en representaties van fietsbestuur opnieuw konden worden geconfigureerd.

Methodologisch probeert het onderzoek bruggen te slaan tussen onderzoek naar mobiliteit en kritisch-realistisch sociaal onderzoek door een realistische benadering van actieonderzoek te gebruiken. De studie volgt de kritisch-realistische ontologie, epistemologie en onderzoeksmethode en probeert sociale mechanismen te identificeren die verschuivingen in bestuurlijke rationaliteiten en representaties kunnen faciliteren. Uit deze keuzes volgt de onderzoeksvraag: Welke sociale mechanismen triggeren de experimentele fietsinitiatieven om rationaliteiten en representaties van jeugdfietsen te actualiseren die hegemoniale praktijken en discoursen tegengaan? Als resultaat worden 'velonomy' en mobiliteit 'commoning' geconceptualiseerd als belangrijke sociale processen om transformatieve verandering in het fietsbeheer te vergemakkelijken. De eerste verwijst naar de deelname van individuen in het collectief genereren en gebruiken van middelen, betekenissen en disposities voor het fietsen om een zekere mate van onafhankelijkheid te krijgen van het hegemoniale systeem van vervoer. De tweede wordt geconceptualiseerd als het proces van het verzamelen en openstellen van de middelen die nodig zijn voor velonomie. Concluderend betoogt de studie hoe deze mechanismen in synergie kunnen werken om vormen van bestuur van de fietsgemeenschap te produceren, waar bestuursprocessen zijn ingebed in de gemeenschappen die ze proberen te mobiliseren.

Yhteenveto

Nuorten 'velonomia' ja liikkumispolitiikan täyskäännös. Realistinen toiminta-tutkimus pyöräilyn yhteistoiminnallisen hallinnan moninaisista rationaliteeteista ja representaatioista.

2020-luvulla lukuisat kaupungit ja yhteiskunnat pyrkivät toteuttamaan toimia, investointeja ja muutoksia, joilla kaupunkipyöräily saataisiin (uudelleen) vakiinnutettua kestäväksi, osallistavaksi ja mukavaksi kaupunkiliikenteen muodoksi. Kriittinen pyöräilytutkimus osoittaa kuitenkin, että tätä kertomusta varjostaa luokkaan, sukupuoleen, ikään, etniseen alkuperään ja muihin sosiaalisiin tekijöihin liittyvä eriarvoisuus. Pyöräilypolitiikkaa ja hallintoa kritisoidaan siitä, että ne ovat juuttuneet yksiulotteisiin liikkumista koskeviin rationaliteetteihin ja tuottavat epäoikeudenmukaisia representaatioita "pyöräilijöistä" ja "pyöräilystä". Kaupunkipyöräily ei ehkä tällä hetkellä pysty hyödyntämään emansipaatorista ja edistyksellistä potentiaaliaan.

Tässä tutkielmassa tarkastellaan näitä teemoja liittyen ihmisryhmään, joka on ratkaisevassa asemassa kaupunkiliikenteen tulevaisuuden kannalta, mutta joka on saanut vain vähän huomiota liikkumistransitioiden alalla: lapset ja nuoret. Tutkimus täydentää ja kritisoi universaaleja näkökulmia liittyen terveiden, ympäristöystävällisten ja aktiivisten pyöräilykansalaisten tuottamiseen. Se hyödyntää kokeilullisia pyöräilyprojekteja luodakseen ja selittääkseen nuorisopyöräilyn muotoja ja hallintaprosesseja, jotka tällä hetkellä jäävät marginaaliseen asemaan.

Tutkimus koostuu kahdesta tapaustutkimuksesta, joista toinen on tehty Jyväskylässä ja toinen Amsterdamissa. Vaikka näissä ympäristöissä on yleisesti ottaen hyvät edellytykset edistää lasten ja nuorten pyöräilyä, tietyt ilmiöt heikentävät edelleen lasten pyöräilymahdollisuuksia. Ensimmäisessä tapaustutkimuksessa keskityttiin harrastuskyyditsemisen ongelmaan. Etenkin keskiluokkaisten lasten vapaa-aikaa ja liikkumista sanelevat yhä enemmän erilaiset aikuisohjatut harrasteet ja sen seurauksena auto- ja aikuisriippuvainen elämäntapa. Toisessa tutkimuksessa tarkasteltiin Amsterdamin pyöräilyohjelman toimintaa kaupungin reuna-alueilla asuvien rodullistettujen työväenluokkaisten lasten ja nuorten keskuudessa, jotka pyöräilevät hyvästä pyöräilyinfrastruktuurista huolimatta huomattavasti vähemmän kuin (syntyperäiset hollantilaiset, valkoihoiset) ikätoverinsa. Molemmissa tapauksissa tutkimukseen osallistui moninainen ryhmä pyöräilynedistäjiä, vanhempia ja muita paikallisyhteisön jäseniä tuottaakseen kokeilullisia pyöräilyhankkeita, joissa pyöräilyhallinnan rationaliteetteja ja representaatioita voitiin muokata uudelleen.

Metodologisesti tutkimus pyrkii rakentamaan yhteyksiä mobilities-tutkimuksen ja kriittisen realistisen sosiaalitutkimuksen välille käyttämällä realistista toimintatutkimuksen lähestymistapaa. Kriittisen realistisen ontologian, epistemologian ja tutkimusmetodologian mukaisesti tutkimuksessa pyritään tunnistamaan sosiaalisia mekanismeja, jotka voivat tuottaa muutoksia pyöräilyhallinnan rationaliteeteissa ja representaatioissa. Tutkimuksen pääkysymys on: mitä sosiaalisia mekanismeja kokeelliset pyöräilyaloitteet käynnistävät, jotka aktualisoivat hegemonisten käytäntöjen ja diskurssien vastaisia rationaliteetteja ja representaatioita? Tutkimus käsitteellistää nuorison "velonomian" (velonomy) ja liikkumisen "yleis-hyödykkeellistämisen" (commoning) sosiaalisiksi prosesseiksi, jotka voivat muuttaa pyöräilyhallintaa. Ensimmäisellä tarkoitetaan yksilöiden osallistumista sellaisten resurssien ja merkitysten kollektiiviseen tuottamiseen ja käyttämiseen, joiden avulla he voivat tulla vähemmän riippuvaisiksi hegemonisesta liikennejärjestelmästä. Jälkimmäinen puolestaan käsitteellistetään prosessiksi, jossa kerätään yhteen ja avataan näitä resursseja. Lopuksi tutkimuksessa esitetään, miten nämä mekanismit voivat toimia synergiassa ja tuottaa pyöräilyn yhteisöhallinnan muotoja, joissa hallintoprosessit on upotettu niihin yhteisöihin, joita ne pyrkivät mobilisoimaan.

Chapter 7

In the 2020s numerous cities and societies are making efforts, investments, and changes to (re)establish urban cycling as a sustainable, inclusive and convenient mode of urban mobility. However, critical cycling research has shown that this narrative is marred by inequalities respective to class, gender, age, ethnicity and other social markers. Cycling governance and advocacy are criticised for being stuck in reductive mobility rationalities and reproducing exclusive representations of 'cyclists' and 'cycling'. As such, urban cycling might currently be unable to meet its emancipatory and progressive potentials.

This thesis addresses these issues from the viewpoint of children and young people. Following critical realist ontology, epistemology and mode of inquiry, the study explains the functioning of social mechanisms (*velonomy* and *mobility commoning*) that can prefigure more inclusive and child-friendly mobilities across different contexts.